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ABSTRACT

Physical education is an essential part of basic general education. Aside from the influence of heredity and nutrition, physical education is the only way in the school's instructional program to insure the development of organic vigor and vitality. It is the only organized means for the development of nerve/muscle skills that are so essential to the individual. Physical education is more important than it has ever been in this country, as the average school pupil is insured little exercise or physical activity other than that received in school instruction. The purpose of this publication is to assist in the promotion of effective physical education programs for all pupils in grades K-12. Most program suggestions are basic in nature, and designed to assist classroom teachers (inexperienced in physical education) in developing activities which will contribute to the physical fitness of their students. Some recommendations go beyond a basic program and suggest advanced activities. This book is divided into three main parts--basic, advanced, and comprehensive programs. Each school is encouraged to follow the four point program (outlined in the basic program) to insure that each pupil receives the benefit of at least a minimum fitness program. (JMK)

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suggestions for school programs

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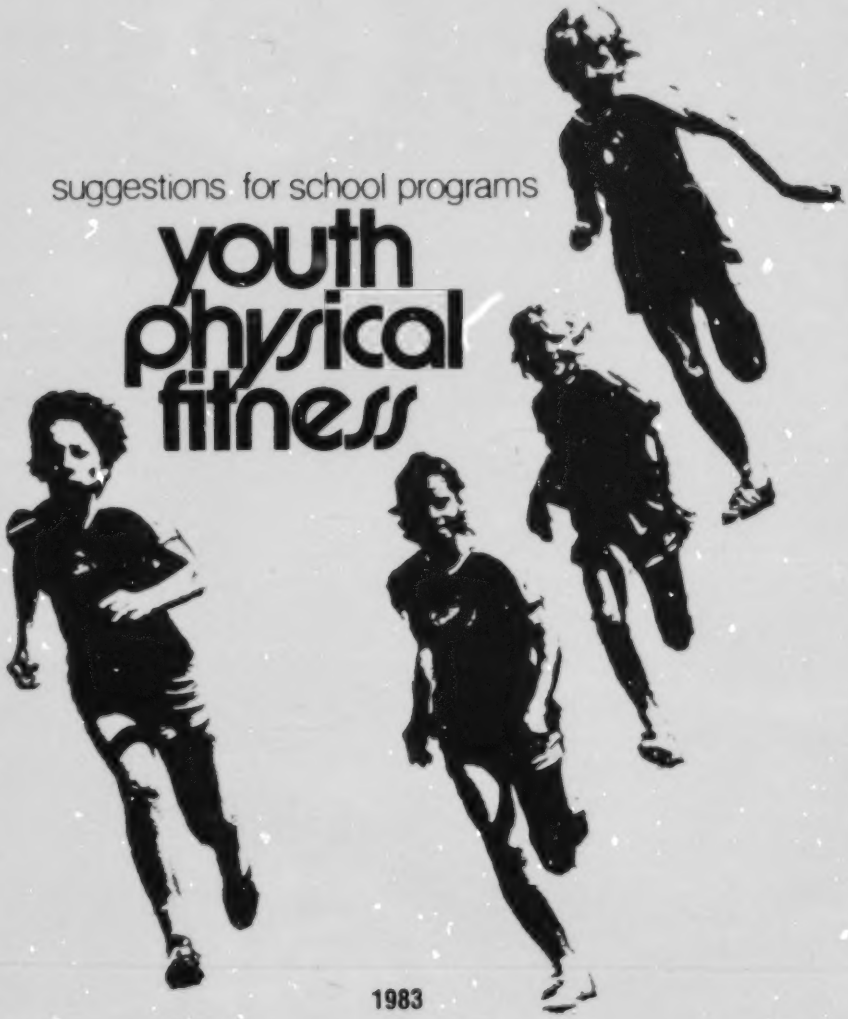

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Introduction

Physical education is an essential part of basic general education. Aside from the influence of heredity and nutrition, physical education is the only way in the school's instructional program to insure the development of organic vigor and vitality. It is the only organized means for the development of nerve/muscle skills so essential to the individual. Physical education is more important than it has ever been in this country, as the average school pupil is insured little exercise or physical activity other than that received in school instruction. Although school administrators and trustees are deluged by demands for higher achievement in such academic subjects as mathematics, science and foreign language instruction, the American public strongly supports medical research findings regarding the need for daily exercise. Parents realize that there is a positive relationship of the pupil's general learning potential and his physical fitness.

The first National Adult Physical Fitness Survey conducted for the President's Council on Physical Fitness and Sports reported:

- 90 percent of the men and women polled favored having physical education programs in the elementary schols. Only 4 percent were flatly opposed to receiving physical education.
- Support for physical education in the secondary schools and in college was slightly higher at 91 percent.
- Of the 76 million adult Americans who have had physical education, more than 65 million thought it was beneficial. Another 9.8 million felt that it "made no difference" or had "no opinion" on the subject.

The purpose of this publication is to assist in the promotion of effective physical education programs for all pupils in grades K-12. Most program suggestions are basic in nature, designed to assist classroom teachers inexperienced in physical education, to develop activities which will make a contribution to the physical fitness of the children in their charge. Some recommmendations go beyond a basic program and suggest advanced activities developed by schools where physical fitness through physical education has become a tradition. Wherever your school rates now, you can find something in this book to help make the physical education program a little better and even a little more fun for the pupils and for you.

This book is divided into three main parts—basic, advanced and comprehensive programs. Each school is encouraged to follow the four point program outlined in the basic program to insure that each pupil receives the benefit of at least a minimum fitness program.

Special emphasis on physical fitness and sports is needed. The existence of many fine programs is recognized but there is a need for improvement in many communities.

Physical fitness is but one aspect of fitness; however, it is a very significant aspect and one which is basic to other forms of excellence. Efforts to improve physical fitness should be carried on with full regard for all fitness qualities—spiritual, mental, emotional, and social.

Physical fitness itself is a broad quality involving medical and dental supervision and care, immunization and other protection against disease, proper nutrition, adequate rest, relaxation, good health practices, sanitation, and other aspects of healthful living. Exercise is an essential element to achieving physical fitness. Strength, stamina, endurance, and other desirable physical qualities are best developed through vigorous activity. Physical fitness is achieved through a sensible balance of all these provisions adapted to age, maturity, and capability of the individual.

Medical authorities support the need for programs of physical activities for all children. Reference to medical opinion is presented in the section titled "Building Community Support."

Youth Physical Fitness is a book that can help you start and continue a school program that will support the national fitness effort. We hope that you will find it a reference you will want to use often and that you will contact the President's Council on Physical Fitness and Sports if you have any questions about its contents.

Basic Beliefs

The President's Council on Physical Fitness and Sports is fully aware that education is a State and local responsibility. Through the cooperative efforts of school board members, school administrators, teachers and organized citizenry, our Nation has developed an increasingly effective school system and has improved specific areas of education. Continuation of such cooperation is heartily encouraged.

We believe that the following recommendations, which were developed after extensive consultation, offer a sound approach to improvement of the physical fitness of children and youth.

- All school children in grades K-12 should be required to participate in daily programs of physical education emphasizing the development of physical fitness and sports skills.

  Medical authorities recommend unequivocally regular vigorous exercise during school years, as such is essential to healthy development of individuals.

  In order to enjoy a sport, master the necessary skills and participate safely, a person must be physically fit. The popular slogan, **Get Fit by Playing,** should be **Get Fit to Play Safely and Effectively**.

  Within the educational context of physical education programs, students should develop knowledge of the effects of activities for conditioning as well as the relation of activities to various aspects of health throughout life. Students need to understand the basic elements of physiology of exercise and the value of participating in regular vigorous activities. The need to continue activities in adulthood should be stressed at an early age and throughout the school physical education experience. Knowledge, understanding and participation should result in the development of desirable attitudes concerning the values of participation in regular vigorous physical activity.

  Special programs of physical education should be provided those pupils with orthopedic problems, obesity, perceptual motor problems, and other health-related problems. Such students must first be identified, along with those who may suffer from physical underdevelopment, malnutrition or inadequate coordination.

  Physical education programs should be planned to include physiological fitness goals along with other educa-

tional aims needed to meet the developmental needs of children; thus, activities must be adapted to individual needs and capacities and be vigorous enough to increase energy utilization and heart rate significantly.

The school physical education program should include a core of developmental and conditioning activities appropriate for each grade level. Activities should be identified and stressed in progressive order. Demonstration standards for survival activities, particularly including swimming, should be established and competence maintained by periodic testing and training.

- Every pupil should have continuing supervision by his family physician and dentist, including periodic examinations and correction of remediable defects.

Through these resources, supplemented wherever necessary and feasible by school and community services, the health appraisal procedures should include:

Identification of pupils with correctable orthopedic defects and other health problems and subsequent referral to medical authorities.

A posture check, including foot examination; pupils with acute problems should be referred to medical authorities.

Height and weight measurements, interpreted in terms of individual needs; pupils who are obviously obese, underweight or malnourished should be identified and referred to medical authorities.

- The Community-School Concept should be encouraged wherever possible as a vehicle to enhance physical activity programs.
- Public school sports facilities belong to the people and should be available for community use when not being used for school activities.

School sports facilities—gymnasiums, swimming pools, tennis courts, etc.—should be available for public use when not being used for school programs and functions.

Part I –
Recommended Basic School Program

Since the "Seven Cardinal Principals of Education" were announced in 1918, schools have held as an objective of education the development of good health for physical efficiency. It would be virtually impossible to find a school in this country that would not list this objective as a part of their current school philosophy. This being the case, all schools should provide for continuing health appraisals for all children; identification of the physically underdeveloped pupil; daily periods of physical activity; and evaluation and incentive programs, regardless of the size of the school facilities or staff.

HEALTH APPRAISALS

It is desirable that every child have continuing supervision by his family physician and dentist, including periodic examinations and correction of any disabilities—so far as is possible.

Through these resources of the home, supplemented wherever necessary and feasible by school and community services, the health appraisal procedures should include:

(1) Identification of pupils with correctable orthopedic and other health problems and subsequent referral to medical authorities.

(2) A posture check, including foot examination; pupils with acute problems should be referred to medical authorities.

(3) Height and weight measurements, interpreted in terms of individual needs; pupils who are obviously obese, underweight or malnourished should be identified and referred to medical authorities.

(4) Other means of health appraisal and follow-through, as necessary.

IDENTIFICATION OF THE PHYSICALLY UNDERDEVELOPED PUPIL

It is impossible to consistently identify the child that is physically below par without administering some type of objective

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test of physical performance. The following screening tests will assist in discovering those children that have low fitness levels. Once they have been identified, they should participate in a program of developmental activities to overcome their deficiencies, and better enable them to compete with their peers on physical activities and develop a life-long appreciation for physical activity.

All pupils should be screened at the beginning of the school year and retested on tests failed each six weeks until they pass. Four screening tests which measure levels of cardiovascular endurance, muscular strength and agility are recommended. They are:

1. Recovery Index Test (cardiovascular endurance)
2. Pullups and Flexed Arm Hang (arm and shoulder strength and endurance)
3. Situps (abdominal strength and endurance)
4. Squat Thrust (agility)

With the possible exception of the Recovery Index Test, failure to pass these tests does not necessarily mean that a pupil is unhealthy. Nor does ability to pass the tests assure that the pupil may not have a health problem. A child's health status is determined by evaluating all of the information gained from the various forms of health appraisal. Special attention should be given to the directions given for administering the Recovery Index Test, which will be difficult for the pupil with a low level of cardiovascular fitness.

Recovery Index Test

The following statement was authorized by the American Medical Association's Committee on Exercise and Fitness.*

Periodic health examinations help in identifying pupils whose physical education programs should be modified because of a health problem or organic defect. Even on an annual basis, however, health examinations cannot uncover every problem that may become obvious during exercise.

Conditions can develop, between examinations or even shortly after an examination, that warrant modification of physical activity. Also, some insidious conditions may escape detection in the most careful examination.

The physical educator, with his background in the basic

* The President's Council on Physical Fitness and Sports acknowledges permission to reprint this article from the Journal of Health, Physical Education and Recreation and The American Medical Association's Committee on Exercise and Fitness.

health sciences and because of frequent and repeated contact with the same pupils, is in a strategic position to observe any unusual reactions during exercise. The screening of pupils who respond poorly to exercise is not a difficult task because it does not involve diagnosis. The teacher's role is merely to note that something may be wrong with the health of a given pupil and to refer the child for medical evaluation.

SKILLFUL OBSERVATION

The first requirement for effective screening is a sensitivity on the part of the teacher to the individual exercise reactions of each pupil. An instructor can easily become so absorbed with the skills he is teaching and the progress pupils are making, that he loses sight of other factors. Then a child may evidence an unusual response to the activity or even show acute distress without the teacher noticing.

With practice, the teacher can become as alert to such signs as he is to evidences of improvement in skill. Such sensitivity is a continuous accompaniment of good instruction and not a separately scheduled technique of teaching. Nor is it time-consuming since, as the teacher becomes adept, these observations become as automatic as correcting an obvious error of performance.

The second requisite of effective screening is an understanding of the reactions to exercise which may indicate possible problems. There are a number of observable signs which may accompany or follow exercise warranting further investigation. They may not be indicative of any health problem, but always demand medical review:

Excessive breathlessness: Some breathlessness is normal with exercise, but breathlessness that persists long after exercise is cause for medical referral.

Bluing of the lips: Except in a cold wet environment, bluing of the lips or nailbeds is an unnatural reaction to exercise. Its occurrence in the ordinary exercise setting is cause for medical referral.

Pale or clammy skin: Pale or clammy skin or cold sweating following or during exercise is not a normal reaction to physical activity within the usual temperature ranges of the gymnasium or playing field. Again, medical referral is recommended.

Unusual fatigue: Excessive fatigue, as evidenced by unusual lack of endurance or early failure to maintain moderate activity, also suggests the need for medical referral. It is dangerous to attribute such reactions to malingering until possible organic causes have been ruled out.

Persistent shakiness: Unusual weakness or shakiness that

continues for more than ten minutes following even vigorous exercise is cause for medical referral. Normally, recovery will be reasonably prompt.

Muscle twitching or tetany: Muscular contractions such as twitching or tetany, whether localized or generalized, sometimes occur as an unusual reaction to exercise. It may be abnormal and warrants medical investigation.

REPORTABLE SYMPTOMS

A number of symptoms relating to exercise which are sometimes reported to the teacher may also be cause for medical referral. An occasional episode need not alarm the instructor, but recurring or persisting patterns of any of the following, particularly when related to activity, indicate the need for medical review:

1. Headache
2. Dizziness
3. Fainting
4. Broken night's sleep
5. Digestive upset
6. Pain not associated with injury
7. Undue pounding or uneven heartbeat
8. Disorientation or personality changes

The instructor should take a cautious, but not overprotective, approach to the problem of screening unusual reactions to exercise. He should constantly remind himself that *unusual* reactions are not necessarily *abnormal* reactions. He should take care not to alarm students and their parents. And, above all, he should resist the very human tendency to make a presumptive diagnosis, which is definitely out of the realm of the teacher's responsibility.

The instructor should remember that some of the symptoms and signs enumerated above are transient and may indicate only that a boy or girl is physically unfit. With careful, progressive conditioning in such cases, not only will the untoward reactions finally disappear, but the boy or girl concerned will eventually begin to enjoy physical activity. Only a physician, however, should attempt to distinguish between a lack of fitness and some incipent health problem.

RECOVERY INDEX TEST

One of a number of tests designed to check the physiologic response of the body to exercise is the Recovery Index Test.[1] As in other tests, this attempts to appraise the general capacity. Specifically, these tests tax the respiratory-circulatory resources of the individual.

The Recovery Index Test consists of stepping up and down a platform 16 inches high, 30 times a minute for four minutes. The height of the platform may vary from 14 inches for shorter students to 20 inches high for taller youths. The subject faces the platform and, starting with either foot at the signal "Up," places his foot on the platform, then steps up so that both feet are on the platform, then immediately steps down again in the same rhythm. The subject then continues stepping up and down in a marching count, "Up—two, three, four." The signal "Up" comes every two seconds.

After four minutes of this exercise, the subject sits down and remains quiet. One minute later, the pulse rates are taken. Older students, under the supervision of the school nurse or other teachers, can be paired to take each other's pulse rates. The following schedule is used:

1. one minute after the exercise for 30 seconds.
2. two minutes after the exercise for 30 seconds.
3. three minutes after the exercise for 30 seconds.

When the three 30-second pulse count total:	The Recovery Index is:	Then the response to this test is:
199 or more	60 or less	Poor
from 171 to 198	between 61 and 70	Fair
from 150 to 170	between 71 and 80	Good
from 133 to 149	between 81 and 90	Very Good
132 or less	91 or more	Excellent

To determine the Recovery Index, add the three pulse counts and refer to the table above.

This test is intended to determine the individual's response to moderately strenuous exercise. It helps to select those who do not respond efficiently to exertion and when repeated on the same boy or girl, furnishes a method of measuring individual improvement. When a youth fails to complete the test or makes a score of 60 or less according to the table above, medical referral may be desirable. The Index does not furnish an overall estimate of fitness; it merely indicates the quality of the response to this particular test.

TEST PRECAUTIONS

Young people whose previous health history or medical examination indicates the possibility of rheumatic or other forms of heart disease should not take the Recovery Index Test or similar strenuous tests without medical clearance. The same rule applies to pupils with other known health problems of a serious nature and those convalescing from illness. In this respect, it is better to err on the side of caution.

Those taking the test should be observed carefully for signs of distress and in the event of serious difficulty should be asked to discontinue the stepup activity. Those stopping before completing the test, either voluntarily or on request, should be referred for medical review, as should all pupils scoring below 60 (poor) on the Recovery Index table. Those who do poorly on this test may be unfit to engage immediately in a strenuous exercise program.

The likelihood is that most of these early "stoppers" and low-scorers will be found to have nothing organically wrong. Ordinarily, their problem will be a low level of fitness or, in some cases, lack of motivation. However, enough health problems will probably be revealed through careful referral to warrant the procedure. In any event, the physical educator would need medical advice in developing activity programs for these low-scorers.

A boy or girl with a Recovery Index over 60 is not necessarily free of health problems or physical defects. The Recovery Index Test is only one aspect of evaluating a person's response to exercise. However, coupled with continuing observation by the teacher of pupils' reactions to physical activity, it is a valuable tool. These supplement, but in no way replace, periodic examinations and other fitness tests.

MEDICAL REFERRALS

In all such procedures, which at best are only rough measures of limited aspects of health, there is inevitably a problem of over and under referral. A number of children who have nothing wrong with their health will be referred and some with problems will be missed. This results from both the lack of precision in the measure itself and the human error in those doing the referring. Optimum results will be obtained when observations are carefully made and checked and when tests are used exactly as stipulated.

PHYSICIAN-SCHOOL RELATIONSHIPS

The effectiveness of the recognition and referral procedures depends on the cooperative relations achieved between the school and local medical practitioners. Physicians familiar with the purposes and procedures of observations by physical educators will have a different attitude from those unacquainted with either the problem or the practice.

The answer to cooperative relations is joint action to work out local policies and practices. Communities differ greatly but, in general, three groups are basic to effective community action on school health problems—the school, the local medical society, and the health department.

Procedures for referral in vision and hearing screening have been worked out in most communities. These observations of reactions to exercise can follow a similar pattern. It is important that what and how it is to be done be jointly agreed upon and all who are involved be fully informed of these procedures.

INTERPRETING THIS PROGRAM TO THE PUBLIC

The public is accustomed to vision and hearing screening in the schools and knows, in general, how these programs are conducted. It is generally appreciated that physical education activities of a vigorous nature are a part of the school curriculum. Few appreciate how teacher observation in physical education might screen out certain health problems. Parents might easily become alarmed unless any unusual reaction to exercise observed in their child was carefully interpreted to them.

Such interpretation should stress the fact that failure to complete the procedure or a poor Recovery Index generally indicates that the pupil is in poor condition rather than that there is anything wrong with his basic health. However, medical referral is a wise precaution before a pupil who is physically below par embarks on a fitness program.

WORKING WITH PUPILS

A pupil may become apprehensive when he is referred to his physician. Consequently, it is important to reassure those referred as well as their parents.

SUMMARY

A poor reaction to exercise is usually a sign of a low level of fitness rather than of disease. The medical referral is necessary to make certain there is no contraindication to a graduated physical reconditioning program.

As is true in referring pupils for observed signs of poor response to exercise, the teacher should keep in mind that a poor Recovery Index is to be expected in a poorly conditioned person. While taking a cautious, but not overprotective, approach to referral, the instructor should carefully avoid any hint of medical diagnosis.

The basic objective of developing referral procedures relating to physical activity is to protect and enhance the health of pupils. Together, alert teacher observation and intelligent use of the Recovery Index can help to identify pupils with low levels of fitness and, in some instances, may reveal signs of health problems which warrant medical investigation.

FLEXED ARM HANG (GIRLS)
(Arm and Shoulder Strength)

Equipment: A stopwatch and a sturdy bar, comfortable to grip and adjustable in height (height of bar should be approximately the same as the pupil being tested).

Starting Position: Using an overhand grip, the pupil hangs with chin above bar and elbows flexed. Legs must be straight and feet free of floor.

Action: Hold position as long as possible.

Rules. Timing should start as soon as pupil is in position and released from any support other than her own. Timing should stop when the pupil's chin touches or drops below the bar. Knees must not be raised and kicking not permitted.

To Pass:
Ages
10–17—3 seconds

PULLUPS (BOYS)
(Arm and Shoulder Strength and Endurance)

Equipment: A bar of sufficient height, comfortable to grip.

Starting Position: Grasp the bar with palms facing forward; hang with arms and legs fully extended. Feet must be free of floor.

Action:

Count 1—Pull body up with the arms until the chin is higher than bar.

Count 2—Lower body until arms are fully extended.

Repeat as many times as possible.

Rules: The pullup must be smooth, not a snap movement, legs must be kept straight and not kicked. One pullup is counted each time the pupil raises his chin above the bar.

To Pass:
Ages:
10–13—1 pullup
14—2 pullups
15—3 pullups
16—4 pullups
17—5 pullups

SITUPS (BOYS AND GIRLS)
(Abdominal Strength and Endurance)

Equipment None. However, a mat or other soft (grass) surface preferred.

Starting Position: Pupil lies on back with knees flexed, feet about 1 foot apart. The hands, with fingers laced, are grasped behind the head. A partner holds the performer's ankles and keeps his heels in contact with the floor while counting each successive situp.

Action:

Count 1—Sit up and turn the trunk to the left, touching right elbow to left knee.

Count 2—Return to starting position.

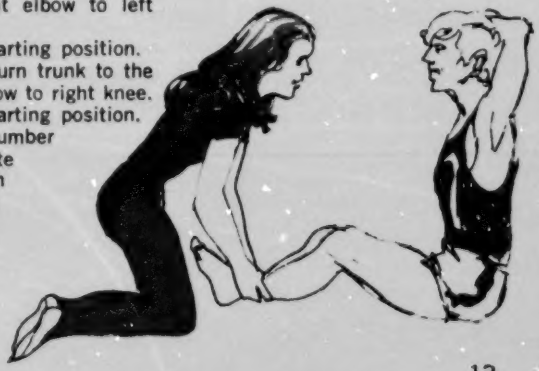
Count 3—Sit up and turn trunk to the right, touching left elbow to right knee.

Count 4—Return to starting position.

Repeat the required number of times. One complete situp is counted each time the pupil returns to the starting position.

To Pass:

Ages	Boys (Situps)	Girls (Situps)
10—	25	20
11—	26	20
12—	30	20
13—	38	20
14—	45	20
15—	49	19
16—	50	18
17—	45	18



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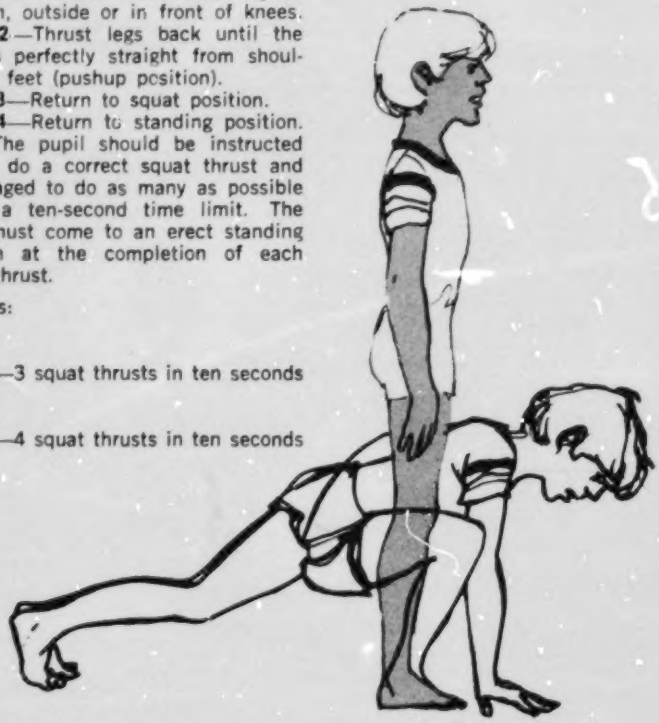
SQUAT THRUST (BOYS AND GIRLS)
(Agility)

Equipment: A stopwatch or a watch with a sweep-second hand.
Starting Position: Pupil stands erect.
Action:
Count 1—Bend knees and place hands on floor in front of feet. Arms may be between, outside or in front of knees.
Count 2—Thrust legs back until the body is perfectly straight from shoulders to feet (pushup position).
Count 3—Return to squat position.
Count 4—Return to standing position.
Rule: The pupil should be instructed how to do a correct squat thrust and encouraged to do as many as possible within a ten-second time limit. The pupil must come to an erect standing position at the completion of each squat thrust.

To pass:
Girls
Ages
10–17—3 squat thrusts in ten seconds
Boys
Ages
10–17—4 squat thrusts in ten seconds



DAILY PHYSICAL ACTIVITY

Most young people do not get enough exercise on their own. Statistics show that children spend a large proportion of their free time engaged in sedentary activities such as television, bus riding, studying and idle socializing. The schools can play an important part in meeting physical development needs of children if they provide a daily period of physical activity. Now, more than ever, the school should continue providing the physical education that all children need to prepare them for an adult society that is continually reducing the need for phys-

ical tasks and, in so doing, is promoting the increase of diseases with inactivity.

The Council recommends that all students spend at least 50 percent of their daily physical education class in sustained conditioning exercises and developmental activities designed to build vigor, strength, flexibility, endurance and balance. In the remaining available time, a variety of activities including sports skill instruction and participation should be provided. All physical education activities should be analyzed for their contributions to physical fitness, and special emphasis should be placed on the improvement of the individual child.

All classes should begin slowly with warm-up activities consisting of such exercises as walking, stretching and bending, easy jogging in place and deep breathing prior to exercising strenuously. Several minutes should also be reserved for the same type of activity to serve as a cool-down at the conclusion of the class.

All exercises contained in this section are for girls, as well as boys, unless specifically noted.

Primary Grades

Pupils in the primary grades should participate in a variety of physical activities involving gross body movements that will help build a foundation for physical fitness throughout life. All activities should be conducted with full regard for the maturation, growth and development of each child.

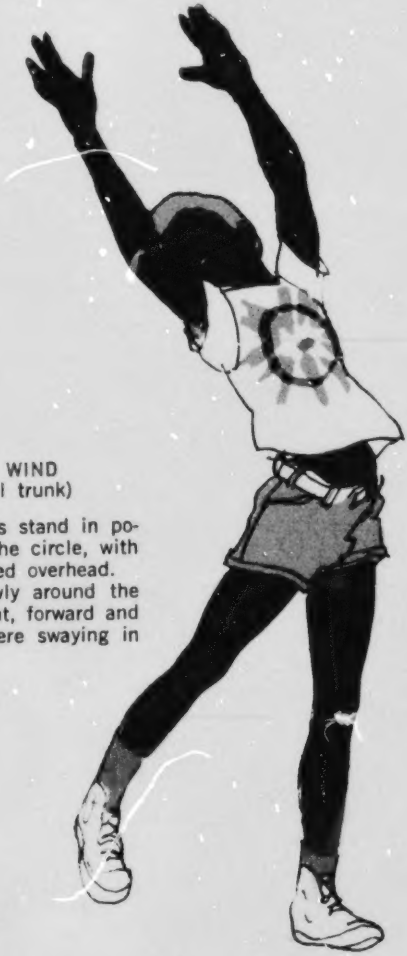
Running is a simple exercise, as well as one of the most beneficial. Every pupil should run each day. The distances should be varied and the pupils should be encouraged, but not pressured, to run progressively greater distances.

Young children like to imitate and they want to have a good time. Animal movements provide a chance to develop fitness and have fun too. The following exercises are suggested for use during the daily period of physical education. A simple circle formation around the teacher will permit the children to move freely and provide a good setting for the teacher to set the pattern of activity.

The suggested activities contained here in the primary grades section should not be a limiting factor in the program for children of this age group. Many classes, under the leadership of their teacher, will use these "starter" activities to go to many more activities suggested in this book or in other publications. Most States have a Physical Education Curriculum developed by the State Department of Public Instruction that is available free for school use.

TORTOISE AND HARE
(RUNNING IN PLACE)
(cardiorespiratory)

Starting Position—Pupil stands at attention.
Action:
Count 1—Jog slowly in place.
Count 2—On the command, "Hare," the tempo doubles. The knees are lifted high, while arms pump vigorously.
Count 3—On the command, "Tortoise," the tempo slowed to an easy jog. Repeat the commands, "Tortoise," "Hare."

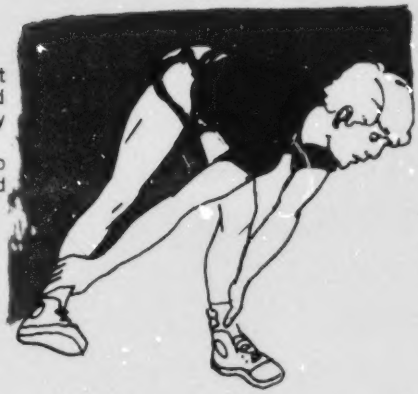


TREES IN THE WIND
(flexibility—lateral trunk)

Starting Position—Pupils stand in position to move around the circle, with arms raised and extended overhead.
Action—Pupils run slowly around the circle, bending left, right, forward and back as though they were swaying in the breeze.

GORILLA WALK
(flexibility and coordination)

Starting Position—Pupils spreads feet shoulder width, bends at the waist, and grasps ankles, keeping the knees fully extended.
Action—Walk forward holding firmly to the ankles. Keep the knees extended and the legs straight.



BUNNY HOP
(leg extensors)

Starting Position—Pupils assume squat position, ready to move around the circle, with hands behind their ears, palms forward, to simulate rabbit ears.
Action—Pupils move around the circle by hopping with both feet together, landing in the squat position.

HOP
(leg extensors)

Starting Positions—Pupils stand in position to move around the circle.
Action—Pupils move forward by hopping on the left foot, taking several long steps.
Repeat, hopping on right foot.

BEAR WALK
(flexibility—hamstrings)

Starting Position—Pupils stand in position to move around the circle. Bend from the waist and place hands on the floor.

Action—Pupils travel around the circle, moving right arm and right leg simultaneously as one step, then left arm and left leg.

CROSSING THE RIVER
(agility—locomotor skills)

Starting Position—Divide the class into half. One-half is again divided in half to form two facing lines, about 60 feet apart. These two lines form the "shores" of the "river." The other half of the class is placed between the two lines, or in the "river."

Action—On signal, pupils on both shores attempt to cross to the other side without being tagged. The ones in the middle attempt to tag those crossing. Those tagged stay in the "river" and help tag the others as the game continues.

RABBIT RACE

(cardiorespiratory and leg extensor)

Starting Position—Pupils stand in a straight line side by side, 3 feet apart. A finish line is designated 60 feet in front of the pupils.

Action—Pupils race by hopping with both feet together—first to the right, then to the left, then straight ahead, repeating this pattern until reaching the finish line.

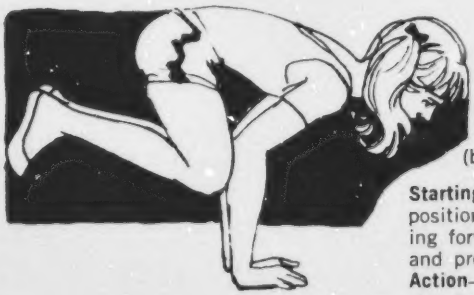
The race may be varied by hopping in other ways; e.g., on one leg.

KNEE DOWN

(leg extensor strength and balance)

Starting Position—Pupils stand with toes of both feet on a line.

Action—Without using the hands or moving the toes from the line, kneel on both knees. Return to standing position without using hands and keeping toes on the line.



FROG STAND

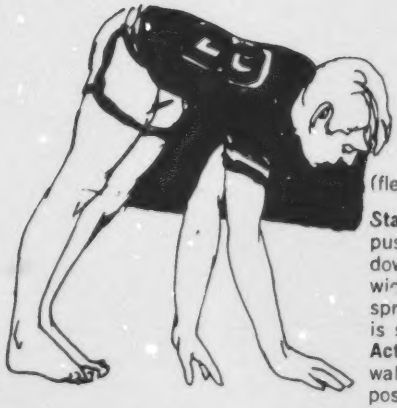
(balance and arm strength)

Starting Position—Pupil assumes squat position, hands on floor, fingers pointing forward. The elbows are inside of, and pressed against, knees.

Action—Lean forward slowly, transferring body weight to hands, raising feet clear of the floor. Maintain balance, keeping head up. Hold for several seconds, then return to starting position. Repeat, maintaining balance for increasingly longer periods.

COFFEE GRINDER
(arm, shoulder and lateral trunk strength)

Starting Position—Pupils support extended body (turned sidewards) on right arm and both feet. Right arm and both legs are fully extended, feet slightly apart.
Action—Move feet and body in a circle using the right arm as a pivot. Repeat, using the left arm.



MEASURING WORM
(flexibility—lower back and hamstrings)

Starting Position—Pupils assume the pushup position, body extended, face down, arms extended fully, shoulder width apart, hands on floor, fingers spread and pointed forward. The body is supported on hands and toes.
Action—Hold the hands stationary and walk feet up, as close to the hands as possible. Then, keeping the feet stationary, walk hands forward to starting position. Repeat alternate actions.

WHEELBARROW
(arm, shoulder and abdominal strength)

Starting Position—Pupils pair off. One takes "hands and knees" position. The hands are directly under the shoulders, fingers pointing forward. His partner grasps the kneeling pupil's ankles, raising his legs.
Action—The first pupil walks forward on his hands. His feet and legs are supported by partner walking between the outstretched legs.

Intermediate and secondary grades

The exercises and activities selected for the intermediate and secondary grades are more formal than those presented for the primary grades. The instructor should not feel restricted from using activities presented in the previous section, especially for intermediate grade children if they seem appropriate.

Again, the activities presented here are for both girls and boys unless specified otherwise. The calisthenic exercises have been arranged in a sequence that places the easier, or warmup, type exercises first. Also, standing exercises are grouped together as are the lying exercises for obvious reasons of administration. It is not suggested that all of the activities be given during each class period. However, it is recommended that exercises and activities be selected by the instructor that affect the cardiovascular system and most of the major muscle groups of the body. Also, the number of repetitions each exercise should be done varies with the condition of the class and has been purposely omitted. Generally, ten repetitions of most exercises is a good starting point.

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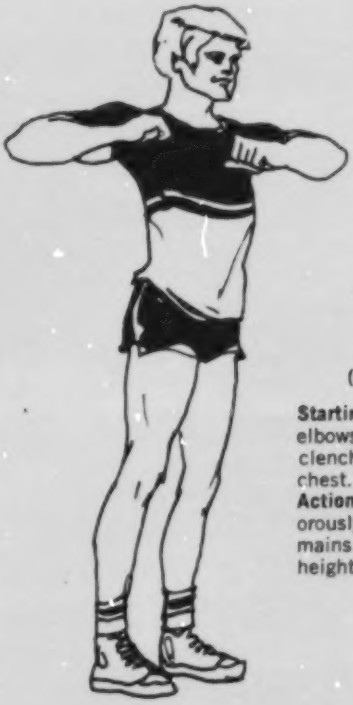
DEEP BREATHER
(warmup—respiratory system)

Starting Position—Pupil stands at attention.
Action:
Count 1—Rise on toes while circling the arms inward and upward slowly, and inhaling deeply. At the end of movement, arms are extended overhead.
Count 2—Continue circling arms backward and downward while lowering the heels and exhaling.
This exercise should be done slowly and rhythmically.



WING STRETCHER
(flexibility—back and chest)

Starting Position—Stand erect; raise elbows to shoulder height, fists clenched, palms down in front of chest.
Action—Thrust elbows backward vigorously and return. Be sure head remains erect. Keep elbows at shoulder height.

ONE-FOOT BALANCE
(balance)

Starting Position—Pupil stands at attention.
Action:
Count 1—Stretch left leg backward, while bending trunk forward and extending arms sideward until this position is reached: The head is up, trunk parallel to floor; the left leg is fully extended with toes of left foot pointed. The supporting leg is kept straight. Hold this position for 5 to 10 seconds. Return to starting position.
Count 2—Repeat, using the opposite leg for support.

JUMPING JACK
(coordination—cardiorespiratory)

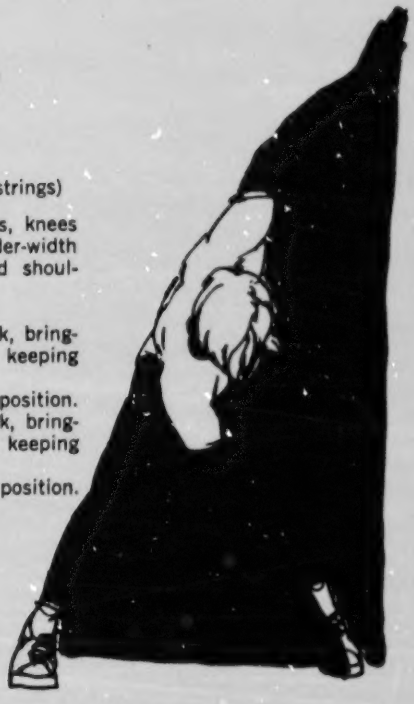
Starting Position—Pupil stands at attention.
Action:
Count 1—Swing arms sideward and upward, touching hands above head (arms straight) while simultaneously moving feet sideward and apart in a single jumping motion.
Count 2—Spring back to the starting position.

BODY BENDER
(flexibility—lateral trunk)

Starting Position—Pupil stands, feet slightly apart, hands clasped behind the head.
Action:
Count 1—Bend sideward at the hips to the left as far as possible. Keep the feet stationary and the toes pointed straight ahead.
Count 2—Return to starting position.
Count 3—Repeat, bending to the right.
Count 4—Return to the starting position.

WINDMILL
(flexibility—lower back, hamstrings)

Starting Position—Pupil stands, knees flexed, feet spread shoulder-width apart, arms extended sideward shoulder-high, palms down.
Action:
Count 1—Twist and bend trunk, bringing right hand to the left toe, keeping arms straight, knees flexed.
Count 2—Return to starting position.
Count 3—Twist and bend trunk, bringing left hand to the right toe, keeping arms straight, knees flexed.
Count 4—Return to starting position.



BACK STRETCHER
(lower back—thighs)

Starting Position—Pupil stands with feet spread apart, arms extended overhead.
Action:
Count 1—Bend forward from hips, knees bent. Swing arms downward between legs.
Count 2—Return to starting position.

JUMP AND TOUCH
(legs extensors)

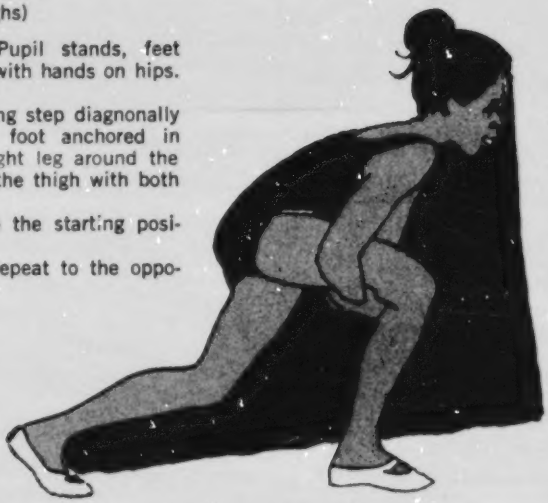
Starting Position—Pupil assumes a half-crouch position, bending from the waist as though about to begin a broad jump. Arms are extended backward.
Action—Spring straight upward, bringing knees to the chest and heels to buttocks, meanwhile swinging the arms downward and around the legs, attempting to touch hands together under the legs. Land in the starting position, ready for the next upward leap.

SQUAT THRUST
(cardiorespiratory—agility)

Starting Position—Pupil stands at attention.
Action:
Count 1—Bend knees and place hands on the floor in front of the feet. Arms may be between, outside of or in front of the bent knees.
Count 2—Thrust the legs back far enough so that the body is perfectly straight from shoulders to feet (the pushup position).
Count 3—Return to squat position.
Count 4—Return to erect position.

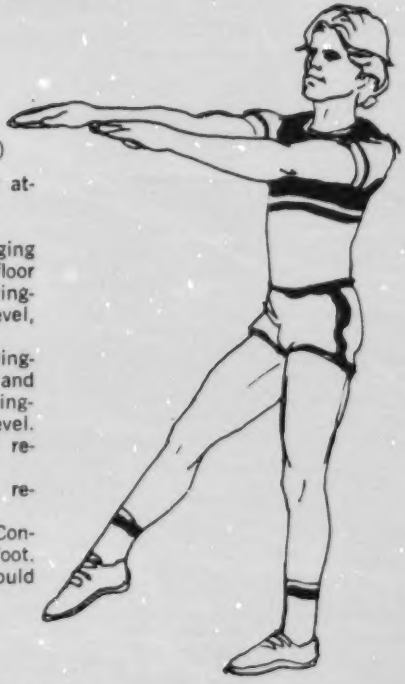
BEAR HUG
(thighs)

Starting Position—Pupil stands, feet comfortably spread with hands on hips.
Action:
Count 1—Take a long step diagnonally right, keeping left foot anchored in place; tackle the right leg around the thigh by encircling the thigh with both arms.
Count 2—Return to the starting position.
Counts 3 and 4—Repeat to the opposite side.



THE COORDINATOR
(coordination—cardiorespiratory)

Starting Position—Pupil stands at attention.
Action:
Count 1—Hop on left foot, swinging right leg forward, touching toe to floor in front of left foot, meanwhile bringing both arms forward to shoulder level, fully extended.
Count 2—Hop again on left foot, swinging right foot to the right side and touching toe to floor, meanwhile flinging arms sideward at shoulder level.
Count 3—Hop again on left foot, returning to position of Count 1.
Count 4—Hop again on left foot, returning to starting position.
Repeat, hopping on right foot. Continue, alternately hopping on each foot. As exercise is mastered, tempo should be increased.



SQUAT JUMP
(leg extensor strength)

Starting Position—Pupil assumes semisquat position, hands clasped on top of head, feet 4 to 6 inches apart, heel of left foot on line with toes of the right foot.

Action:

Count 1—Spring upward from the floor, reversing the position of the feet and coming down to the semisquat position. Hands remain on head.

Count 2—Same movement, reversing feet.

Continue, reversing feet on each upward jump.

KNEE RAISE (SINGLE AND DOUBLE)
(hip flexors and abdominals)

Starting Position—Pupil lies on back with knees slightly flexed, feet on floor, arms at side.

Action:

Count 1—Raise one knee up as close as possible to chest.

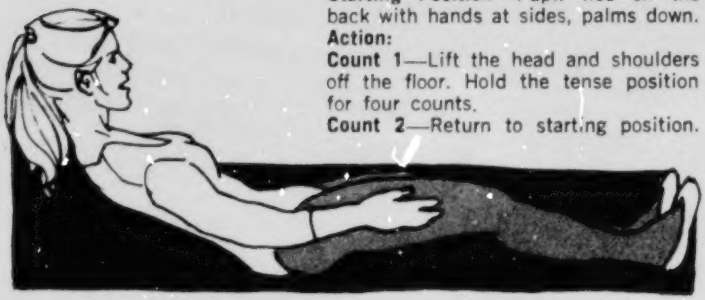
Count 2—Fully extend the knee so the leg is perpendicular to the floor.

Count 3—Bend knee and return to chest.

Count 4—Straighten leg and return to starting position.

Alternate the legs during the exercise. The double knee raise is done in the same manner by moving both legs simultaneously.

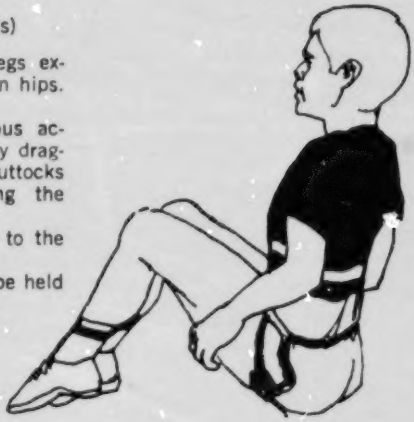
HEAD AND SHOULDER CURL
(abdominals and hip flexors)



Starting Position—Pupil lies on the back with hands at sides, palms down.
Action:
Count 1—Lift the head and shoulders off the floor. Hold the tense position for four counts.
Count 2—Return to starting position.

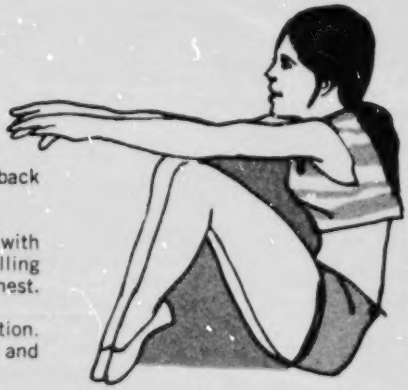
LEG EXTENSION
(hip flexors and abdominals)

Starting Position—Pupil sits, legs extended, body erect and hands on hips.
Action:
Count 1—With a quick, vigorous action, raise and flex the knees by dragging feet backward toward the buttocks with the toes lightly touching the ground.
Count 2—Extend the legs back to the starting position.
The head and shoulders should be held high throughout the exercise.



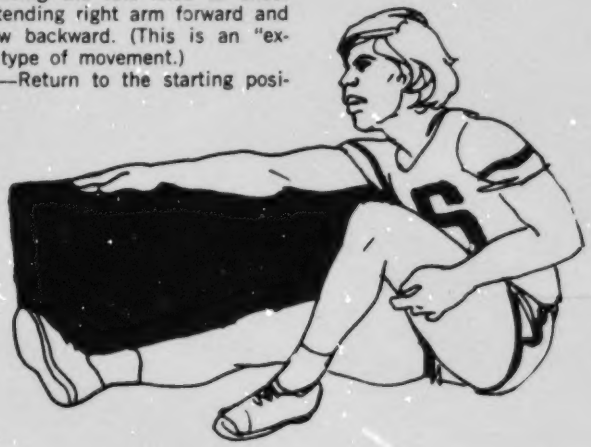
UP OARS
(abdominals and hip flexors)

Starting Position—Pupil lies on back with arms extended behind head.
Action:
Count 1—Sit up, reach forward with the extended arms, meanwhile pulling the knees tightly against the chest. Arms are outside the knees.
Count 2—Return to starting position. The exercise is done rhythmically and without breaks in the movement.



SNAP AND TWIST
(abdominal and hip flexors)

Starting Position—Pupil lies on back with arms extended beyond head.
Action:
Count 1—With a vigorous action, sit up and bring the left knee to chest while extending right arm forward and the elbow backward. (This is an "explosive" type of movement.)
Count 2—Return to the starting position.
Count 3—Repeat the movement to the opposite side.
Count 4—Return to starting position. The exercise is done rhythmically.



BACK TWIST
(hip flexors and abdominals)

Starting Position—Pupil lies on back, arms extended sideward, palms on the floor, and legs raised to a vertical position.
Action:
Count 1—Keeping both feet together swing legs slowly to the left until almost touching the floor. Keep arms, shoulders, and head in contact with the floor.
Count 2—Return to starting position.
Count 3—Repeat the movement to the right.
Count 4—Return to starting position.

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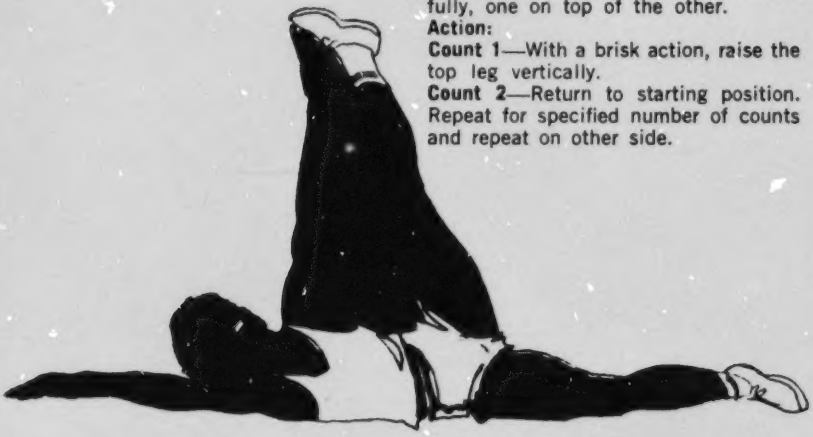
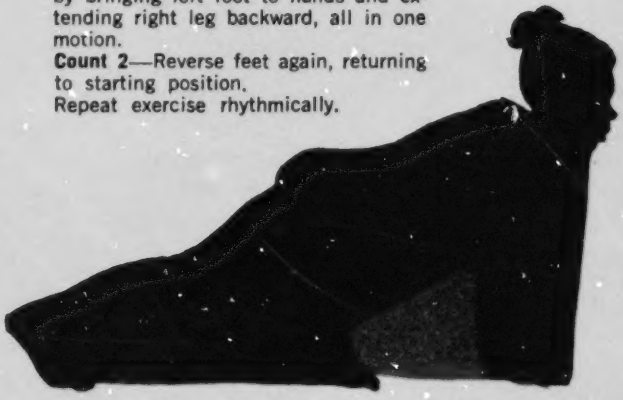
SIDE LEG RAISE
(lateral muscles of the leg)

Starting Position—Pupil lies on side, arms extended overhead. The head rests on the lower arm. Legs are extended fully, one on top of the other.
Action:
Count 1—With a brisk action, raise the top leg vertically.
Count 2—Return to starting position. Repeat for specified number of counts and repeat on other side.



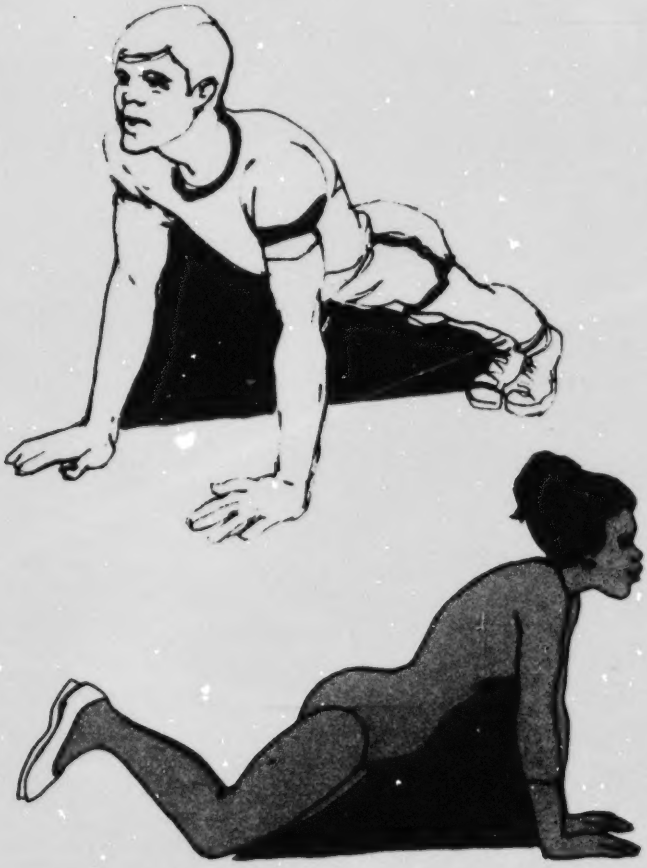
THE SPRINTER
(cardiorespiratory, arms and legs)

Starting Position—Pupil assumes squatting position, hands on the floor, fingers pointed forward, left leg fully extended to the rear.
Action:
Count 1—Reverse position of the feet by bringing left foot to hands and extending right leg backward, all in one motion.
Count 2—Reverse feet again, returning to starting position.
Repeat exercise rhythmically.



PUSHUPS
(arms, shoulders and chest muscles)

Starting Position:
Boys—Extend arms and place hands on ground just under and slightly outside of the shoulders, fingers pointing forward. Extend body so that it is perfectly straight. The weight is supported on the hands and toes.
Girls—Extend arms and place hands, fingers pointing forward, on ground just under and slightly outside of the shoulders. Place knee on floor and extend body until it is straight from the head to the knees. Bend knees and raise the feet off the floor. The weight is supported by the hands and knees. (Also for boys who cannot do regular pushups.)
Action:
Count 1—Keeping body tense and straight, bend elbows and touch chest to floor.
Count 2—Return to original position. (The body must be kept perfectly straight. The buttocks must not be raised. The abdomen must not sag.)



BOUNCING BALL
(arms, shoulders and chest)

Starting Position—Pupil assumes push-up position, by bending forward extending the arms and placing the hands on the floor, shoulder width apart, fingers pointing forward, and extending trunk and legs backward in a straight line. The body is supported on the hands and toes.

Action—Bounce up and down by a series of short, upward springs. (Try clapping hands together while body is in the air.)

Circle Drills

Class Formation.—These activities are conducted with the class formed in a circle, pupils spaced 6 feet apart. A double circle may be used for larger groups.

Procedure.—Pupils walk around the circle at a slow pace, keeping the circle formation. They need not walk in step. Standing in the center of the circle, the teacher calls the name of an activity such as those listed below and performs it. Immediately each pupil also performs the exercise, continuing to move around the circle.

After doing the exercise for about 10 or 15 seconds, the instructor commands, "Relax," upon which all pupils assume the original, slow walk. After 5 to 15 seconds, the instructor calls and performs a new exercise and the class again does it. The time between activities should vary with the nature of the exercise and the condition of the pupils.

After pupils have learned the activities, the drills may be conducted without commands by having the pupils follow the leader as he changes from one activity to another.

Activities:

All Fours.—Face down, on hands and feet. Walk forward.

Bear Walk.—Face down, on hands and feet, travel forward by moving the right arm and right leg simultaneously, and then the left arm and left leg simultaneously.

Leap Frog.—Pupils count off by twos. On command, the even-numbered pupils leap over the odd numbered. At the next command the "odds" leap over the "evens."

Indian Walk.—Bend knees slightly, bend trunk forward, arms hanging down until back of hands touch the ground. Retain this position and walk forward.

Crouch Run.—Lean forward at the waist until the trunk is parallel with the ground. Retain this position and run slowly.

Straddle Run.—Run forward, leaping obliquely to the right as the right foot advances, leaping obliquely to the left as the left foot advances.

Knee-Raised Run.—Run forward, raising the knees as high as possible on each step. Pump arms vigorously.

One-Leg Hop.—Travel forward by hopping on the left foot. Take long steps. Change to right foot and repeat.

Carries

Before starting these activities the pupils pair off according to size, each set of partners designated A and B.

Fireman's Carry.—A and B stand facing. A places his left arm between legs of B. The crotch of B is at the shoulder of A. B leans forward, lying across A's shoulders. A straightens up, lifting B off the ground. A, using his left hand, grasps B's left wrist, which is hanging over A's shoulder. Carrying B in this position, A runs or walks forward.

Cross-Carry.—A bends forward in front of B, with right side toward B. B bends forward lying across A's back. A places left arm around B's shoulders and right arm around his legs. A straightens up, lifting B. Retaining this position, A runs or walks forward, carrying B.

Single-Shoulder Carry.—A and B stand facing. A assumes a semi-squatting position. B leans forward until he is lying across A's left shoulder. A clasps his arms around B's legs and straightens up, lifting B from the ground. Carrying B in this position, A runs or walks forward.

Army Carry.—B stands sideward in front of A. A bends his knees, places one arm behind B's knees and the other across the small of B's back. B places his near arm around A's shoulders and clasps his hands together. A lifts B, and carries him, walking or running forward.

Note.—Partners should be comparable in size and strength. Instruction in the proper technique of lifting should be given prior to using the carries. Lifting should be done by using the legs rather than the back.

Apparatus

Exercise on apparatus is especially valuable in developing strength, agility, and endurance. Only a few of the many exercises which can be performed on the apparatus have been selected. Extreme care should be taken in the use and maintenance of apparatus to prevent accidents.

Formation.—Class arrangement is dependent upon the size of the class, and facilities and apparatus available. The class should be divided into small groups, each working at a different apparatus, to provide maximum participation.

Apparatus and Activities:

Climbing ropes:

1. Ordinary climb, using legs and feet.
2. Climb hand over hand, without aid of feet, kicking legs with each pull of the arms.
3. Climb hand over hand, without aid of feet, legs dangling.

Parallel bars.—From end of bars, body between bars, supported on fully extended arms:

1. Lower body until elbows fully flexed. Press back up to starting position. (Dip.)
2. Dip while swinging legs.
3. Travel forward on hands.
4. Swing both legs together forward and upward until they are higher than bars. then swing them in an arc to the left, meanwhile pushing off with the hands, vaulting over bar, landing on feet alongside of bar, facing in original direction. This is done in one continuous motion.
5. Same as No. 4, vaulting to the right.

Horizontal bar (chinning bar):

1. Hang from bar, feet off floor. Do one or more pullups.
2. Hang, raise one knee to chest. Return. Alternate knees.
3. Hang, raise both knees to chest.
4. Hang, raise one leg, fully extended, until parallel to floor. Return. Alternate legs.
5. Same as No. 4, raising both legs.

Horizontal ladder (indoor and outdoor):

1. Hanging from one of the rungs, do one or more pullups.
2. Travel forward, moving hands from rung to rung.
3. Travel sideward.
4. Hang, raise knees (as on horizontal bar).
5. Hang, raise legs (as on horizontal bar).

Peg Board:

1. Hang, move across board horizontally by moving pegs from hole to hole.
2. Hang, climb board vertically.
3. Hang, combine vertical and horizontal movements.

Tumbling

Tumbling is an excellent activity for developing coordination, agility, and control of the body in motion. Care should be taken to follow proper safety measures. Tumbling should not be included in the program unless the teacher or leader is adequately prepared to conduct the activities safely.

Formation.—Divide the class into small groups to provide maximum participation.

Activities:

Forward roll.—Pupil squats, keeping feet together. Bend forward and place hands on the mat (or turf), shoulder width apart. fingers pointing forward. Arms are on the outside of knees. Duck head between legs, keeping chin to the chest and tucking

knees close to chest, roll forward on back of neck and shoulders, grasping knees. Come to a stand.

Shoulder roll.—Turn slightly to the right, place hands on the mat in line with the mat. Roll forward on the left shoulder, pulling the left arm into the chest and rolling on the back and up to the feet. Do the same roll on the right shoulder.

Backward roll.—From standing position, lean forward, fall backward to a sitting position, catching the weight partially with the hands. Roll backward, placing hands on the mat, over the shoulders and at the same time drawing the knees to the chest. Push off with the hands and roll backward to a standing position.

Dive roll.—Same as a forward roll, preceded by a short dive from a stand. Take off from both feet stretching arms forward, catching the weight on the hands, lowering the body to the neck and shoulders. Keep head tucked tight with chin to chest.

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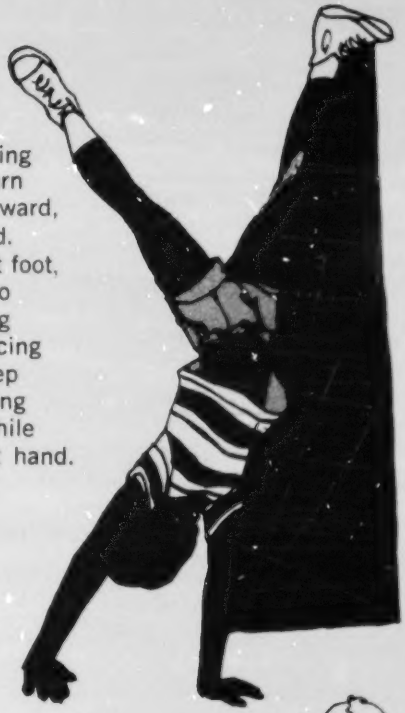


Cartwheel.—From standing position, make a quarter turn left, placing right foot sideward, right arm extended upward. Transfer weight to the right foot, and swing the right hand to the mat. Swing the left leg up, at the same time placing left hand on the mat. Keep arms and legs spread. Bring the left foot to the mat while pushing off with the right hand. Follow through to standing position.

Running Relays

Stick-Jab Relays.—Teams line up single file behind a common starting line. A soccer ball, softball, or basketball is placed on the starting line in front of each team. The first pupil on each team is given a stick or baseball bat. At the starting signal, he jabs the ball until it crosses the distance line, 30 feet away. As soon as the ball passes the distance line, he picks it up and runs back to the starting line, where he hands stick and ball to the next pupil. The second pupil repeats the performance of the first. The relay continues until the last pupil has returned to the starting line.

Hold It Relay.—Teams line up single file behind a common starting line. The first pupil of each team holds a basketball or soccer ball behind his back and runs to the distance line 45 feet away. There he puts the ball between his legs and holds it there. Using only his legs to hold the ball, he returns to the starting line. He does not give the ball to the next pupil until he has crossed the starting line. If he drops the ball, he must pick it up and replace it before he can continue.

The ball can be held between the ankles or between the thighs, but the position should be uniform throughout each relay.

Crawling Relays

Caterpillar Race.—Teams line up single file behind a common starting line. Each pupil bends forward and grasps the ankles of the pupil in front of him. At the starting signal, the teams move forward as best they can, continuing to hold ankles. The first pupil may use his hands in any manner to help his team. The first team to have all members cross the distance line 60 feet away wins. If the line breaks, it must join again before it proceeds.

Crab Walk Race. Teams line up single file behind a common starting line. The first pupil of each team assumes the "Crab Walk" position with his feet forward on the starting line. At the starting signal, he moves forward to the distance line 40 feet away. He touches it with his feet and returns to the starting line in the reversed position, with the head and hands leading. The second pupil may not start until the first pupil touches the finish line.

Goat-Butting Relay.—Teams line up single file behind a common starting line. A ball (preferably a medicine ball or a partially inflated basketball) is placed in front of each team. At the starting signal, the first player drops to his hands and knees, and butts the ball with his head, toward the distance line 50 feet away. He may run or crawl in following the ball, but may butt it only with his head. After reaching the distance line, he butts it back to the second player at the starting line. This continues until each pupil has completed his turn.

Wheelbarrow Race.—Members of each team pair off. Teams line up single file behind a common starting line. The first pupil walks on his hands while his partner holds his ankles. They advance to the distance line 60 feet away, exchange positions, and return to starting line. After the first two pupils return and cross the starting line, the next pair starts.

Carrying Relays

Back-to-Back Relay.—Members of each team pair off according to size. Teams line up single file behind a common starting line. The first set of partners on each team stand back-to-back and links elbows. The carrier always has his elbows inside the elbows of the pupil he is carrying. At the starting signal, the carrier leans forward, lifting his partner off the ground, and carries him to the distance line 35 feet away. After they cross the distance line, the carrier lowers his partner to the ground. They reverse positions and return to the starting line, signaling the next set of partners to begin.

Paul Revere Relay.—Mark two parallel lines 50 feet apart. Each team selects a rider. The remaining members of each team count off by twos. The "ones" from each team form a single file behind one line and the "twos from each team form a single file behind the other line, directly opposite their teammates. Each rider stands in front of the "ones" on his team. At the starting signal, the rider mounts the back of the first No. 1 player in line, who carries him to the other line. There, the rider changes mounts, to the first No. 2 player in line, without touching the ground. They

he must mount again at the point of the fall. If he falls in changing mounts, he must get back on his original mount before making the change.

Back-Support Relay.—Members of each team pair off according to size. Teams line up single file behind a common starting line. The front pupil of the first set of partners sits on the ground with his feet on the starting line and leans backward. His head rests in the cupped hands of his partner behind him. At the starting signal, the front pupil arches his back and, with his weight supported on his feet and his head in partner's hands, moves to the distance line 35 feet away. They reverse positions and return to the starting line, signaling the next set of partners to begin.

EVALUATION AND INCENTIVE PROGRAMS

Good programs result from a number of factors including planning, implementation, and evaluation. Validated tests have long been a part of good physical education programs. Testing is the best means of measuring achievement and diagnosing weaknesses; they also provide a means of self-evaluation for the pupil and a strong motivation for improvement.

Award programs can assist in raising pupil incentives to achieve continually higher goals for themselves and their peer groups. This section contains descriptions of the Youth Fitness Test, the Presidential Physical Fitness Award, the Instructors Award, the State Champion Physical Fitness Award, the Presidential Sports Award and the State School Demonstration Center Project.

Youth Fitness Test

The AAHPERD Youth Fitness Test has been officially adopted by the President's Council on Physical Fitness and Sports as part of its motivational and evaluation program. The test consists of a battery of six tests designed to measure various components of physical fitness of girls and boys, ages 10-17. Results on the complete set of items give a overall picture of the fitness of the pupil. The Youth Fitness Test is the only fitness test for which national norms have been developed, and is the basis for the Presidential Physical Fitness Award.

The tests can be conducted in the gymnasium and outdoors, depending upon space available and weather conditions. It is recommended that the tests be given at the early part of both the fall and spring semesters and that program adjustments be made to correct for any program weaknesses if they appear.

The test items and the physical components which they measure are:

1. Pullups (boys)—arm and shoulder girdle strength
   Flexed Arm Hang (girls)—arm and shoulder girdle strength
2. Situps—abdominal and hip flexor strength
3. Shuttle Run—speed and change of direction
4. Standing Broad Jump—explosive power of leg extensor muscles
5. 50 Yard Dash—speed
6. 600 Yard Run-Walk—cardiovacular endurance

PULLUPS (BOYS)

Equipment—A bar, of sufficient height, comfortable to grip.
Starting Position—Grasp the bar with palms facing forward; hang with arms and legs fully extended. Feet must be free of floor.
Action:
1. Pull body up with the arms until the chin is placed over the bar.
2. Lower body until the elbows are fully extended.
3. Repeat the exercise as many times as possible.

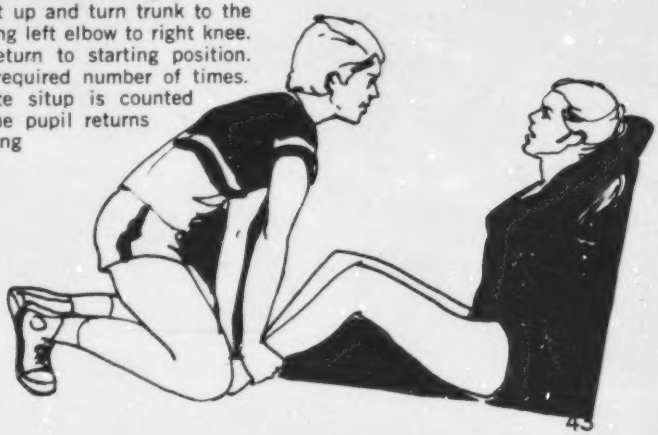
Rules:
1. The pull must not be a snap movement.
2. Knees must not be raised.
3. Kicking the legs is not permitted.
4. The body must not swing.
5. One complete pullup is counted each time the pupil places his chin over the bar.

FLEXED ARM HANG (GIRLS)
(Arm and Shoulder Strength)

Equipment—A stopwatch and a sturdy bar, comfortable to grip and adjustable in height (height of bar should be approximately the same as the pupil being tested).
Starting Position—Using an overhand grip, the pupil hangs with chin above bar and elbows flexed. Legs must be straight and feet free of floor.
Action—Hold position as long as possible.
Rules—Timing should start as soon as pupil is in position and released from any support other than her own. Timing should stop when the pupil's chin touches or drops below the bar. Knees must not be raised and kicking not permitted.

SITUPS (BOYS AND GIRLS)
(Abdominal Strength)

Equipment—None. However, a mat or other soft (grass) surface preferred.
Starting Position—Pupil lies on back with knees flexed, feet about 1 foot apart. The hands, with fingers laced, are grasped behind the head. A partner holds the performer's ank'es and keeps his heels in contact with the floor while counting each successful situp.
Action:
Count 1—Sit up and turn the trunk to the left, touching right elbow to left knee.
Count 2—Return to starting position.
Count 3—Sit up and turn trunk to the right, touching left elbow to right knee.
Count 4—Return to starting position.
Repeat the required number of times. One complete situp is counted each time the pupil returns to the starting position.

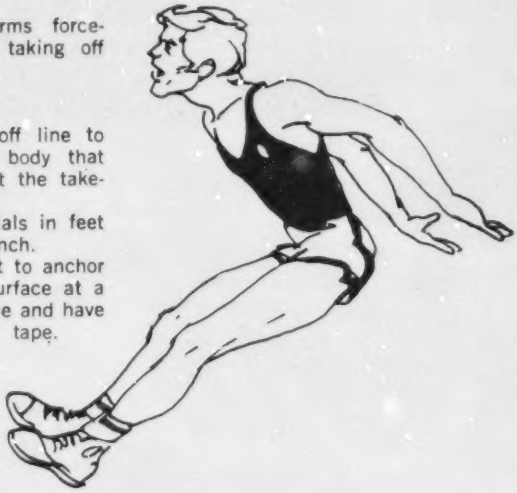


SHUTTLE RUN

Equipment—Two blocks of wood, 2- by 2- by 4-inches (blackboard erasers may be used) and stopwatch. Mark two parallel lines 30 feet apart. Place the blocks of wood behind one of the lines.
Starting Position—Pupil stands behind the line opposite the blocks ready to run.
Action—On the signal, "Ready—Go!" the pupil runs to the blocks, picks up one, returns and places it behind the starting line. (He does not throw or drop it.) He then runs and picks up the second block and carries it back across the starting line.
Rules:
1. Allow two trials.
2. Disqualify any trial in which the block is dropped or thrown.
3. Record the better of the two trials in seconds to the nearest 10th.

STANDING BROAD JUMP

Equipment—Any level surface and tape measure.
Starting Position.—Pupil stands with the feet comfortably apart, with toes just behind the takeoff line. Preparatory to jumping, pupil should have knees flexed and should swing the arms backward and forward in a rhythmical motion.
Action—Jump, swinging arms forcefully forward and upward, taking off from the balls of the feet.
Rules:
1. Allow three trials.
2. Measure from the takeoff line to the heel or any part of body that touches the surface nearest the takeoff line.
3. Record best of three trials in feet and inches to the nearest inch.
Note—It may be convenient to anchor the tape measure to the surface at a right angle to the takeoff line and have the pupil jump along the tape. The scorer stands to the side with a stick, touches the stick to the point where the pupil lands, and observes the mark to the nearest inch.



FIFTY-YARD DASH

Equipment—Stopwatch.
Starting Position—Pupil stands behind the starting line. The starter takes a position at the finish line with a stopwatch. He raises one hand preparatory to giving the starting signal.
Action—When the starter brings his hand down quickly and hits his thigh, the pupil leaves his mark. As the pupil crosses the finish line, time is noted and recorded.
Rules:
1. The score is the lapsed time between the starter's signal and the instant the pupil crosses the finish line.
2. Record the time in seconds to the nearest 10th.

Options:
Ages 10—12, 1-mile or 9-minute run
Ages 13 or older, 1½-mile or 12-minute run

600-YARD RUN—WALK

Equipment—Stopwatch, and running area with designated starting and finish lines.
Starting Position—Pupil stands behind starting line.
Action—On the signal, "Ready!—Go!" The pupil starts running the 600-yard distance (walking only if necessary).
Rules:
1. Walking is permitted, but the object is to cover the distance in the shortest possible time.
2. Record the time in minutes and seconds.
3. Course should be laid out on level ground.
Note—It is possible to test several pupils at the same time. Have the pupils pair off before the start of the test. One of the partners runs, while the other stands near the timer. The timer calls out the time continuously, until the runners have all crossed the finish line. Each pupil near the timer listens for, and remembers, his partner's time as the latter finishes.

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Presidential Physical Fitness Award

THE PROGRAM

Established in March, 1966, the Presidential Physical Fitness Award program honors boys and girls who demonstrate exceptional physical achievement. It is designed: (1) to motivate boys and girls to develop and maintain a high level of physical fitness; (2) to encourage good testing programs in schools and communities; (3) to stimulate improvement of health and physical education programs; and (4) to provide additional information on the physical condition of America's youth.

The Award program was conceived by the President's Council on Physical Fitness and Sports, and program details were developed jointly by the Council and the American Association for Health, Physical Education, Recreation & Dance. The program is administered by these two organizations.

THE AWARD

Winners of the Presidential Physical Fitness Award receive a certificate (8 x 10) suitable for framing and an emblem designed for wear on sweaters, jackets and blazers. Schools and organizations participating in the program must agree to purchase these items for all boys and girls qualifying for the Award. (Award winners shall not be asked to pay the fee charged for the awards. It is suggested that financial help be sought from local PTAs, service clubs, and veterans' groups.)

The Award certificate is handsomely printed in gold and black and bears the President's signature, the Presidential seal, and a congratulatory message. The recipient's name and the year should be added by the school or organization prior to presentation. The Award emblem is three inches in diameter and embroidered in gold, red, white, and blue. Qualified students may purchase extra emblems, if orders are placed through their schools or organizations. The emblem bears a white number on a red field indicating the number of years the recipient has won the Presidential Physical Fitness Award.

THE PARTICIPANTS

The Presidential Physical Fitness Award program is open to schools, YMCAs, Boys' Clubs, recreation departments, Jewish Community Centers, and others which have qualified physical education and/or physical fitness personnel.

THE RECIPIENTS

Any boy or girl, age 10-17 who scores at or above the 85th percentile (for his or her respective age group) on all six items of the AAHPERD Youth Fitness Test, is eligible for the Presidential Award.

THE TEST

Already widely used throughout the country, the AAHPERD Youth Fitness Test assesses physical strength, stamina, speed, agility, and coordination. The test items are situps, shuttle run, standing broad jump, 50-yard dash, 600-yard run, and pullups for boys and the flexed-arm hang for girls.

THE PRESENTATION

It is suggested that annual awards dinners, traditional honors assemblies, or special demonstration programs for parents and other guests would be appropriate occasions for presenting Presidential Physical Fitness Awards. Physical education departments may want to schedule both fall and spring presentations. An individual boy or girl, however, is eligible for only one Presidential Award during any year.

Application forms for obtaining the Presidential Physical Fitness Award can be obtained by writing to the President's Council on Physical Fitness and Sports, Washington, DC 20001.

The following standards must be achieved in each of the six test items to qualify for the Presidential Physical Fitness Award:

BOYS

Age	Situps (flexed leg)	Pullups	Standing Broad Jump	50-Yard Dash	600-Yard Run-Walk	Ages 10-12 1-mile or 9-min. run*		Ages 13 and over 1½-mile or 12-min. run*		Shuttle Run
	1 min.					Time	Yards	Time	Yards	
10	42	5	5'8"	:7.7	2:11	7:06	2081			:10.4
11	43	5	5'10"	:7.4	2:09	6:43	2143			:10.1
12	45	6	6'1"	:7.1	2:0	6:20	2205			:10.0
13	48	7	6'8"	:6.9	1:54			9:40	3037	:09.7
14	50	9	6'11"	:6.5	1:47			9:40	3037	:09.3
15	50	11	7'5"	:6.3	1:42			9:40	3037	:09.2
16	50	11	7'9"	:6.3	1:40			9:40	3037	:09.1
17	49	12	8'0"	:6.1	1:38			9:40	3037	:09.0

*Options. For 600-yard run-walk.

GIRLS

Age	Situps (flexed leg)	Flexed-Arm Hang	Standing Broad Jump	50-Yard Dash	600-Yard Run-Walk	Ages 10-12 1-mile or 9-min. run*		Ages 13 and over 1½-mile or 12-min. run*		Shuttle Run
	1 min.					Time	Yards	Time	Yards	
10	38	:24	5'5"	:7.8	2:30	8:33	1801			:10.9
11	38	:24	5'7"	:7.5	2:25	8:02	1824			:10.5
12	38	:23	5'9"	:7.4	2:21	7:28	1847			:10.5
13	40	:21	6'0"	:7.2	2:16			14:00	2232	:10.2
14	41	:26	6'3"	:7.1	2:11			14:00	2232	:10.1
15	40	:25	6'1"	:7.1	2:14			14:00	2232	:10.2
16	38	:20	6'0"	:7.3	2:19			14:00	2232	:10.4
17	40	:22	6'3"	:7.1	2:14			14:00	2232	:10.1

*Options. For 600-yard run-walk.

Instructor's Award

A new instructor's emblem is available to teachers and other instructors who qualify young people for the Presidential Award. The emblem is four inches in diameter, embroidered in gold, red, white and blue. To order, use the Official Application form available from the President's Council on Physical Fitness and Sports.

The standards listed below must be achieved by boys and girls to qualify for the Presidential Physical Fitness Award. These are actual 85th percentile scores on the test items and are not arbitrary standards.

STATE CHAMPION PHYSICAL FITNESS AWARD

The State Champion Physical Fitness Award Program was established in 1972 to provide recognition for outstanding school achievement in physical fitness. It is co-sponsored by the American Alliance for Health, Physical Education and Recreation and the President's Council on Physical Fitness and Sports.

The State Champion Award is presented annually to three schools in each state. It goes to the school in each of the following categories that qualifies the highest percentage of eligible students for the Presidential Physical Fitness Award:

Schools with 100 or fewer students,

Schools with 101-500 students,

Schools with more than 500 students.

The winning schools each receive a distinctive plaque and statewide and national recognition. And every student who

helps the school win by qualifying for the Presidential Award will receive a special embroidered State Champion emblem!

An application deadline which comes near the end of the usual school year is established each year. Information and application forms are available from the President's Council on Physical Fitness and Sports, Wash., D.C. 20001.

PRESIDENTIAL SPORTS AWARD

The Presidential Sports Award was established to encourage participation in sports on a regular basis at minimum levels to provide some exercise for physical fitness. It is available in 43 sports to those 15 years of age and older.

Qualification is based on 50 hours of participation, spread over at least 50 activity sessions, within a period of four months. Concessions will be made only in sports where seasons may be short or access to facilities limited. In such cases, the 50 hours or required activity may be accomplished in fewer than 50 sessions.

Write to the following for additional information:

President's Council on Physical
Fitness and Sports
Washington, D.C. 20001

School Demonstration Centers

Each State has been allotted a specific number of schools that it can select to serve as demonstration centers for the President's Council on Physical Fitness and Sports. These schools represent the highest quality of physical education programs of the State. The criteria for the selection of these centers is developed by the State Department of Public Instruction and approved by the Council. Each school that is selected receives a certificate and pennant from the Council and a White House letter of congratulations from the Consultant to the President on Physical Fitness and Sports.

Schools that serve as a demonstration center for a period of three consecutive years are eligible to receive honor roll status. The demonstration centers are carried on a national directory in Council headquarters and used for referral to anyone wishing to know where outstanding programs of physical education may be observed.

For information on applying as a demonstration center school for your State, contact the State Director for Physical Education at your State Department of Public Instruction.

Part – II Advanced School Program

Part I of this book concerned itself with program recommendations for a basic school program. This section, Part II, will describe program ideas that have been developed by master teachers of physical education in schools that have had a tradition of reaching the fitness objective of physical education.

Many of the activities will not be covered in great depth simply because the book would then become unmanageable. If additional information or material is sought, contact the President's Council on Physical Fitness and Sports.

The following activities are for use by the instructor who wants to go beyond the basic program. Some of the suggestions are, perhaps, more suited for boys instead of girls, or vice versa. This choice is left to the instructor and the students. In either case, they are designed to get more fitness producing activity into the regular physical education class period.

Continuous Rhythmical Activities

Many students enjoy doing exercise to music. The added rhythm helps to develop smooth flowing body movements, a sense of timing, precise body control and high levels of physical fitness.

Exercises done to music should stress flexibility, strength, endurance, balance and coordination. A routine should be designed to provide enough stress and overload to build muscular strength and endurance in all body parts as well as improve circulatory efficiency.

The use of apparatus such as balls, hoops, ropes and weights can be used to advantage with music. In addition, walking or easy jogging between routines provides for the type of continuous rthythmical movement that can serve as a cool-down at the end of an exercise session.

Agility Drills

Agility, or response, drills have been used successfully in athletic programs to develop quickness, mental concentration

and physical fitness. The drill that follows was designed for use in the daily physical education class to insure that the fitness objective of physical education is reached during each period. The drill can be repeated as many times as is within good training principles and the number of pushups or length of running time increased accordingly.

Starting Position: Class formation, "ready" position.

Whistle

#1—Run in place ½ speed with high knee action for 5 seconds. Require correct running form

#2—Move to the push-up, or squat thrust position ending up in the front leaning rest position on a count of 1-2. Count of 1 is the squat position, count of 2 is the thrust position which ends up in the push-up position with arms locked, head-up, back straight. Require loud sharp count.

#3—Class executes 1 push-up on a count of 1-2. Count 1 is the down position and count 2 is the up position. Require a loud sharp count on each movement.

#4—Class recovers to a running position on a count of 1-2. Moving from the thrust position back to the squat position on the count of 1 and then recovering to running position on a count of 2. Run in place 5 seconds.

#5—Repeat procedure outlined in 2 above. Move from running position to push-up position.

#6—Repeat procedures outlined in 3 above. Execute push-up.

#7—Repeat procedure outlined in 4 above. Recover from push-up position to run in place position. Run in place 5 seconds. Require correct running form.

#8—Move from running position to a sitting position on a count of 1. Hands are on floor behind hips with fingers pointing to the rear.

#9—Move from the sitting position by rotating on the left hand, ending up facing in the opposite direction in the front leaning rest position or push-up position with arms locked, head up, body raised. The rotation is accomplished with a growl or yell thus expiring most of the air in the lungs.

#10—Repeat procedure outlined in 3 above. Execute push-up on a count of 1-2.

#11—Repeat procedure outlined in 4 above. Recover to a running position on a count of 1-2. 5 seconds. Require correct running form.

#12—Repeat procedure outlined in 2 above. Recover to a running position to push-up position on a count of 1-2.

#13—Repeat procedure outlined in 3 above. Execute push-up on a count of 1-2.

#14—Repeat procedure outlined in 4 above. Recover to a running position on a count of 1-2, 5 seconds. Require correct running form.

#15—Repeat procedure outlined in 3 above. Execute push-up on count of 1-2.

#16—Repeat procedure outlined in 4 above. Recover to a running position on count of 1-2. 5 seconds. Require correct running form.

#17—Repeat procedure outlined in 8 above. Move from running position to sitting position.

#18—Repeat procedure outlined in 9 above. Rotate from sitting position on left hand to the push-up position facing in the original direction at the start of the drill.

#19—Repeat procedure outilned in 3 above. Execute push-up on count of 1-2.

#20—Repeat procedure outlined in 4 above. Recover from push-up position to running position on a count of 1-2. 5 seconds running. Require correction running form.

#21—Series of short whistles to conclude 1st round of Agility Drill.

Weight Training

Weight training is a systematic series of resistance exercises designed to promote muscle strength and endurance development and conditioning or to rehabilitate persons who have suffered injury or illness. It is now almost universally accepted as an effective, efficient means of developing strength, power and muscle endurance.

Strength is the ability to exert force or overcome resistance in a short maximum contraction and is an important component in sports performance and many forms of physical work.

Power, as used here, refers to a combination of strength and speed. It is the ability to apply strength in an "explosive" movement.

Muscular endurance is the ability of the muscles to continue to contract—to do work requiring strength over long periods.

Weight training, when performed properly, may contribute to flexibility, the ability of the joints to move through a full range of motion. Flexibility is enhanced when opposing muscles are in balance and the muscles and connective tissue are of proper length and elasticity.

Training with weights, under certain conditions, may also contribute to another major component of physical fitness—circulatory endurance, the efficiency of the cardiovascular and respiratory systems. Such conditions require that the exercises be done rhythmically and consecutively with only short rests (30 secs. or less) in between exercise bouts.

Because of its effectiveness and the fact that rather precise routines of progressively increased resistance can be set up, the use of weight training is increasing rapidly in: (1) athletic conditioning and skill training; (2) school and college physical education for girls as well as boys; 3) fitness programs of public and voluntary recreation agencies; (4) rehabilitation work of medical and ancillary units; and (5) individual conditioning regimens.

A well-chosen sequence of weight exercises, pursued regularly over a period time, can bring about significant improvement in the fitness components mentioned above. Physical condition, posture, and appearance can be improved, body measurements reapportioned and sagging body contours firmed up. Weight training is particularly worthwhile in helping the physically underdeveloped persons because the regimen and goals can be easily adapted to individual needs and capacities. Even the weakest and smallest student can be challenged to improve. Progress is obvious in a relatively short time and is satisfying and stimulating to further effort.

Important psychological benefits in poise, self-discipline, self-direction, and self-realization are often derived.

Significant improvement in sports performance can be obtained through selected exercises as well as through those that build overall strength, flexibility, power and endurance.

Although most existing weight-training programs are for men and boys, women and girls can benefit too. Progressive resistance exercises can be easily adapted to each girl's capacity, ability and needs. Most American girls lack adequate strength in arms, shoulders and trunk, and could profit from a developmental routine. Consider, for example, the fact that the age at marriage is earlier in general now than in the past. Many young ladies will be raising families while still in the teens and early twenties. An infant at birth weighs seven or eight pounds, and grows rapidly to 20 pounds within the first year, and in many cases reaching 25-30 pounds before it begins to walk. The young mother who lifts the child 100 or more times a day, in addition to all of life's other demands, requires considerable physical reserves!

The fear that weight exercises will develop bulky, mannish, overly-muscled women is not well founded. In fact, the opposite —a trim, firm, well-contoured figure is usually found among women who undertake regular exercise of this kind.

The difference between weight training for girls and boys is the goal sought, the social setting, and the amount of weight used.

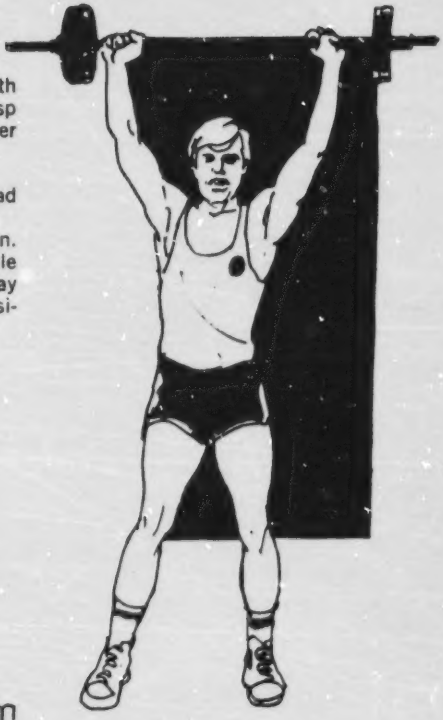
A training program consists of several exercises (called *lifts*) with barbells or dumbbells. Each time the weight is lifted in the exercise is called a repetition. Thus 10R stands for 10 repetitions.

The performance of an exercise a certain desired number of times is called a *set*. Thus, if an exercise is performed three times for, let us say, 10R, 8R, and 6R, three sets have been carried out. The selection of exercise routines, the amount of weight used, the number of repetitions and sets performed are adjusted to the individual according to his capacities and objectives.

Most school physical education programs can only hope to introduce students to the proper techniques of weight training, including the philosophy of the use of antagonistic muscle groups to build greater strength and flexibility and avoid postural problems and loss of range of motion. Real strength improvement or improvement of physical appearance can best be achieved through a special weight training program that meets a minimum of three days per week for a time period of approximately 1½ hours.

A few of the more common lifts are described below: If additional information is desired, contact the Council.

1. MILITARY PRESS (SHOULDER GIRDLE)



Starting Position—Stand erect with feet comfortably spaced apart. Grasp with overhand grip and raise to upper chest.

Action:

Count 1—Press bar upward overhead until elbows are fully extended.

Count 2—Lower bar to chest position. Exhale when raising weight and inhale when lowering it. This exercise may also be preformed from a sitting position.

2. UPRIGHT ROWING (SHOULDER GIRDLE-UPPER BACK)

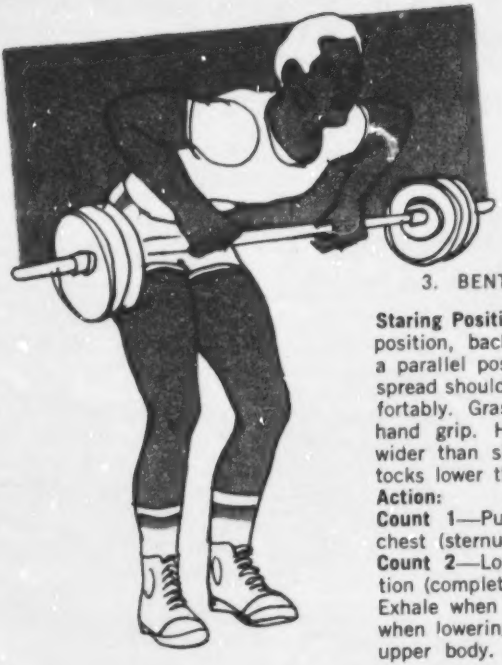
Starting Position—Stand erect with feet spread comfortably apart. Hold bar in front of thighs with overhand grip, hands approximately six inches apart.

Action:

Count 1—Pull bar up to chin, keeping elbows higher than bar.

Count 2—Lower bar to starting position.

Only shoulders and arms should move during this exercise. Exhale when raising the weight, inhale when lowering it.



3. BENT OVER ROWS (LATS)

Staring Position—Stand in a bent over position, back flat and slightly above a parallel position with the floor. Feet spread shoulder width, knees bent comfortably. Grasp barbell with an overhand grip. Hands should be slightly wider than shoulder width. Keep buttocks lower than the shoulders.

Action:

Count 1—Pull bar from floor to the chest (sternum area).

Count 2—Lower bar to starting position (completely extend elbows).

Exhale when lifting from floor. Inhale when lowering. Do not raise and lower upper body.

4. BENCH PRESS
(CHEST AND TRICEPS)

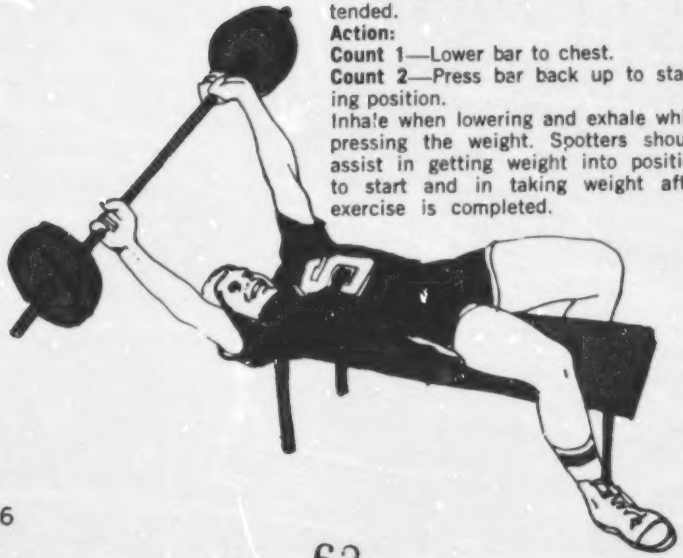
Starting Posiiton—Lie flat on back with feet on floor astride bench. Using overhand grip grasp bar wider than shoulder-width apart with arms extended.

Action:

Count 1—Lower bar to chest.

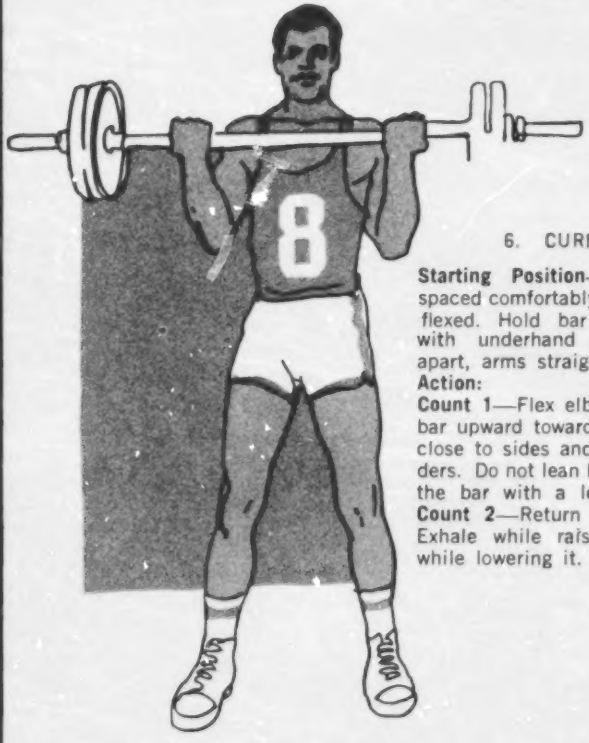
Count 2—Press bar back up to starting position.

Inhale when lowering and exhale while pressing the weight. Spotters should assist in getting weight into position to start and in taking weight after exercise is completed.



5. HALF SQUATS
(LEG EXTENSORS, BUTTOCKS)

Starting Position—Stand erect with feet spread comfortably apart and astride a stool or bench 18" high. Rest barbell across shoulders behind neck, hands grasping bar with overhand grip.
Action:
Count 1—Lower body until leg is bent at approximately a right angle or until buttocks touches bench.
Count 2—Strengthen legs to standing position.
Inhale while squatting, exhale while standing. Spotters should assist in placing and removing the weight from the performer's shoulder.

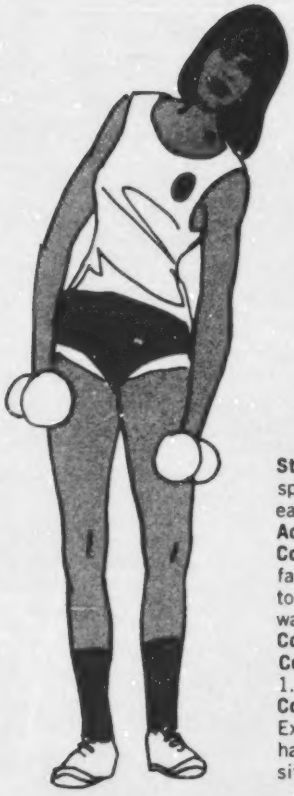


6. CURLS (BICEPS)

Starting Position—Stand erect, feet spaced comfortably apart, knees slightly flexed. Hold bar in front of thighs with underhand grip shoulder-width apart, arms straight.
Action:
Count 1—Flex elbows fully, lifting the bar upward toward chest. Keep elbows close to sides and avoid raising shoulders. Do not lean backward or "bounce" the bar with a leg motion.
Count 2—Return to starting position. Exhale while raising the bar, inhale while lowering it.

7. BARBELL TRICEP EXERCISE (TRICEPS)

Starting Position—Stand erect, feet comfortably spaced apart for balance. Grasp bar approximately two inches apart using a overhand grip. Bring bar to full arm extension above head.
Action:
Count 1—Lower barbell behind head, keeping elbows stationary.
Count 2—Return to starting position.



8. SIDE BENDS (LATER TRUNK-OBLIQUES)

Starting Position—Stand erect, feet spaced slightly apart, arms at sides, each hand holding a dumbbell.
Action:
Count 1—Bend torso to the right as far as possible, keeping dumbbells close to body. Do not lean forward or backward, keep both feet on ground.
Count 2—Return to starting position.
Count 3—Bend torso to left as in count 1.
Count 4—Return to starting position. Exhale while bending to the side. Inhale while returning to the upright position.

9. ABDOMINAL CURLS
(ABDOMINALS)

Starting Position—Lie on back, knees flexed, feet about twelve inches apart. A partner holds the performer's ankles to keep feet on floor.

Action:

Count 1—Curl up to a sitting position, carrying through far enough to touch elbows to knees.

Count 2—Curl down to starting position.

Exhale while curling up, inhale while curling down.

10. HEEL RAISER (CALVES)

Starting Position—Stand erect, barbell held across shoulders behind head, feet spread shoulder-width apart, toes resting on edge of 2' x 4' board.

Action:

Count 1—Raise heels off floor by standing on toes and balls of feet on 2' x 4' board.

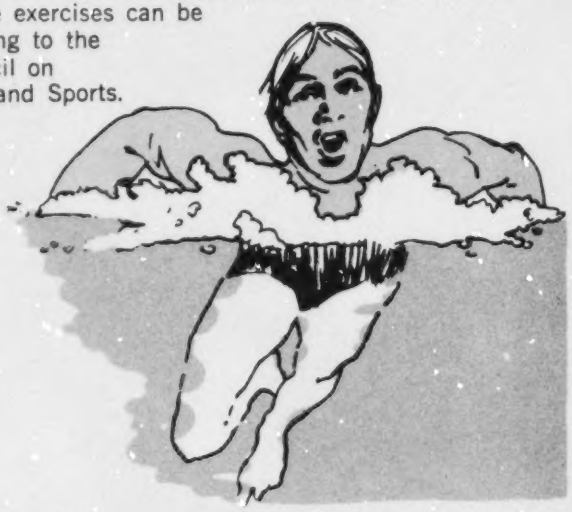
Count 2—Return to starting position. Spotters should assist in getting barbell in start position, balance and removal of bar at completion of exercise.

Aqua-Dynamic Conditioning

Swimming is recognized as one of America's most popular active sports. It is also one of the best physical activities for people of all ages and for many persons who are handicapped. Vigorous water activities can make a major contribution to the flexibility, strength, and circulatory endurance of individuals. With the body submerged in water, blood circulation automatically increases to some extent, promoting deeper ventilation of the lungs and increased heart rate.

Physical education swimming classes provide a unique opportunity to teach young people how to use the medium of water to improve and maintain physical fitness. Historically, swimming classes have taught people how to swim safely and with good skill. Now, through techniques developed by aquatic leaders, water exercises can be taught that make a major contribution to physical fitness, can be done throughout life and require only a minimum amount of water area.

This new approach is called "Aqua-Dynamic Conditioning" and consists of a sequence of exercises performed in water approximately shoulder-deep. The exercises are presented in a way that provides for a "change of pace." That is, a stressing and easing-off of strenuous exercises to less vigorous ones to allow for recovery periods to reduce physical discomfort. Following a period of warm-up activities out of the water, a series of exercises lasting from 15 minutes to 60 minutes, depending upon the degree of difficulty selected, are performed in the pool. The following sample workouts indicate how various water exercises are combined in aqua-dynamic conditioning. Descriptions for all these exercises can be obtained by writing to the President's Council on Physical Fitness and Sports.



Very Low Gear 15 minutes

Side Straddle Hop	15 seconds
Standing Crawl	30 seconds
Walking Twists	15 seconds
Toe Bounce	15 seconds
Flat Back	15 seconds
Pull and Stretch	30 seconds
Leg out	30 seconds
Front Flutter	30 seconds
Back Flutter	30 seconds
Alternate Leg Rearward Bobbing	60 seconds
Leg Swing Outward	30 seconds
Bounding in place with Arm Stretch	30 seconds
Elementary Treading	30 seconds
Lap Swimming—Interval	9 minutes

Low Gear 20 minutes

Stride Hop	15 seconds
Standing Crawl	30 seconds
Front Flutter	1 minute
Back Flutter	1 minute
Front Flutter	1 minute
Pull and Stretch	30 seconds
Leg Swing Outward	1 minute
Advanced Bobbing	1 minute
Left Knee Up, Back	30 seconds
Right Knee Up, Back	30 seconds
Alternate Leg Rearward Bobbing	30 seconds
Knees Up, Back	30 seconds
Alternate Leg Sideward Bobbing	30 seconds
Bounding in Place with Arm Stretch	45 seconds
Knees Up, Front	30 seconds
Advanced Bobbing	1 minute
Knees Up Left	30 seconds
Knees Up Right	30 seconds
Advanced Bobbing	1 minute
Reverse Sides Extension	30 seconds
Lap Swimming—Interval	6½ minutes

Middle Gear 30 minutes

Front Flutter	2 minutes
Back Flutter	2 minutes
Front Flutter	1 minute
Alternate Leg Rearward Bobbing	1 minute
Knees Up, Front	1 minute

Knees Up, Back	1 minute
Alternate Leg Sideward Bobbing	1 minute
Front and Back Extensions	1 minute
High Bobbing	3 minutes
Reverse Sides Extension	1 minute
Progressive Bobbing	2 minutes
Rub-A-Dub-Dub	2 minutes
Left Leg Raiser	15 seconds
Right Leg Raiser	15 seconds
Alternate Leg Raisers	30 seconds
High Bobbing	1 minute
Lap Swimming—Interval	10 minutes

High Gear 60 minutes

Front Flutter	3 minutes
Back Flutter	3 minutes
Advanced Bobbing	3 minutes
Left Knee Up, Back	1 minute
Right Knee Up, Back	1 minute
Knees Up, Back	1 minute
High Bobbing	3 minutes
Knees Up, Front	1 minute
Alternate Leg Rearward Bobbing	2 minutes
Front and Back Extensions	2 minutes
Alternate Leg Sideward Bobbing	2 minutes
Reverse Sides Extensions	2 minutes
Bounding in Place with Arm Stretch	3 minutes
Progressive Alternate Leg Forward Bobbing	3 minutes
Rub-A-Dub-Dub	3 minutes
Left Leg Raiser	30 seconds
Right Leg Raiser	30 seconds
Power Bobbing	1 minute
Alternate Leg Raiser	30 seconds
Bounding in Place with Arm Stretch	3 minutes
Toe Bounce	90 seconds
Leg Swing Outward	2 minutes
Lap Swimming—Interval	Remainder

Interval Training

During the past decade, interval training has become one of the most common methods of conditioning for competition in events requiring physical endurance. It has been used by almost all distance runners during the past 10 years including such great athletes

as Joan Benoit, Bill Rodgers, Alberto Salazar, Francie Larrieu Smith and Craig Virgin. The interval training approach is used universally for the training of swimmers, cyclists and rowers as well as members of soccer, hockey and baseball teams during pre-season conditioning programs. Many coaches have contributed much of the tremendous improvement in the performance of endurance events in track and field and swimming to the increased use of interval training by athletes of both sexes and all ages and abilities.

Regardless of the type of physical activity used (running, swimming, cycling, bench stepping, etc.) interval training is simply repeated periods of physical stress interspersed with recovery periods during which activity of a reduced intensity or rest is performed. During the recovery periods, the individual usually keeps moving and does not completely recover before the next exercise interval. If running is the activity to be used, then the individual runs a specified distance at a predetermined pace and then jogs or walks for a specified distance or time. This procedure is then repeated a certain number of times depending on the ability of the individual and the time available. The primary advantage of interval training over other forms of endurance conditioning is that with the interval approach a greater amount of work can be performed in a shorter period of time.

By alternating periods of vigorous physical activity with periods of light activity or recovery, a wide variety of training programs can be designed to meet the needs, ability and interests of the individual and to fit within the available time and facilities. The total amount of exercise or work performed by an individual during interval training can be varied in several ways. They include variations in the (1) speed or intensity of the effort, (2) duration or distance of the effort, (3) the number of times the effort is repeated, (4) the length of the recovery period and (5) the nature of the activity during the recovery period.

Because of the ability to vary each of these components separately or together, the interval approach to training offers the possibility of unlimited variety and flexibility. Therefore, it can be used to fit into a physical education class schedule.

In order to facilitate the application of interval training methods in physical education programs, a program has been developed based upon 600 yard run-walk times. The approach presented here is simply one method of initiating an interval training program in a physical education class where time is limited and relatively large numbers of students have to be handled. It is not intended as a training program for competitive purposes even though the general training principles

are the same.

In order to use this program, the students first have to perform a 600-yard run-walk. The results of this test is used to group the students into various performance categories and can be used as a baseline evaluation for determining the success of the program if the test is repeated following the training. Once the test has been administered, the students are grouped according to the performance time listed in the left hand column of the following chart.

Run time for four distances from 110 to 440 yards are given for each performance category. One of these distances is selected and the individual runs that distance in the time listed. The number of times these runs are repeated (repetitions) and the duration of recovery interval between each run is given at the bottom of the chart under "Training Programs." The distance run can be interchanged from training session to training session but it is recommended that students perform the 220-yard or 352-yard program for the first few training sessions, (i.e., an individual who has a 600-yard run-walk time between 2:15 and 2:29 would be placed in performance category #5. If 220 yards were selected as the training distance, then his training program would consist of running 220 yards 6 to 8 times at 43-45 seconds with a one minute jogging recovery interval between each run).

As the students are retested on the 600-yard run-walk, improved times will result in placement in higher performance categories which require more strenuous training sessions.

The average time for performing any of the beginning program is from 12 to 16 minutes, depending on the distance selected. During this reasonably short period of time, a substantial increase in endurance capacity can be achieved if these programs are used on a regular basis for 8 weeks or more.

Jogging

The National Adult Physical Fitness Survey showed that 6.5 million adult Americans jog for exercise. Its popularity has been heightened by medical claims of the benefits derived from regular participation in this activity. Regular jogging is credited with promoting a "training effect" which conditions the heart to do more work with less effort; increases the efficiency of the respiratory system by strengthening the muscles that assist breathing; increases blood volume in the body thereby increasing the oxygen carrying capacity of the circulatory system; promotes blood vessel flexibility; aids the digestive system; and helps to maintain proper body weight through the high

INTERVAL RUNNING PACE CHART
Based on 600-yard Run-Walk Time

INTERVAL RUNNING PACE CHART
Based on 600-yard Run-Walk Time

Performance groupings for 600-yard run-walk time. Min:Sec		Interval run time (seconds) for different distances 110 Yards	220 Yards	352 Yards	440 Yards
1.	1:15–1:29	14–15	30–32	51–55	65–69
2.	1:30–1:44	15–16	33–35	56–59	70–74
3.	1:45–1:59	16–17	36–39	60–63	75–79
4.	2:00–2:14	17–18	40–42	64–67	80–84
5.	2:15–2:29	18–19	43–45	68–71	85–89
6.	2:30–2:44	19–20	46–49	72–75	90–94
7.	2:45–2:59	20–21	50–52	76–79	95–99
8.	3:00–3:14	21–22	53–55	80–83	100–104
9.	3:15–3:29	22–23	56–59	84–87	105–109
10.	3:30–3:44	23–24	60–62	88–91	110–114
11.	3:45–3:59	24–25	63–65	92–95	115–119
12.	4:00+	25+	66+	96+	120+

Training Programs

110 Yards: 8–12 repetitions, with 45 seconds jogging recovery interval between each.

220 Yards: From 6 to 8 repetitions, with 1 minute jogging recovery interval between each.

352 Yards: From 4 to 6 repetitions, with 1 minute and 30 seconds jogging recovery interval between each.

440 Yards: From 3 to 5 repetitions, with 2 minutes jogging recovery interval between each.

calorie expenditure. It is reasonable to assume that the number of adult joggers will increase if this activity is properly taught and encouraged through school physical education programs. Children should be taught how to jog as well as understand the benefits that result from regular jogging. It is recommended that motivational programs such as the National Varsity Club Sport Award be utilized to provide added incentive for school jogging programs.

In addition to the physiological effects of training noted above, students should be given the following information as guidelines for their personal jogging programs.

JOGGING GUIDELINES

How to Jog

Run in an upright position, avoiding the tendency to lean. Keep back as straight as you can and still remain comfortable, and keep head up. Don't look at your feet.

Hold arms slightly away from body, with elbows bent so that forearms are approximately parallel to the ground. Occasionally shaking and relaxing the arms and shoulders will help reduce the tightness that sometimes develops while jogging. Periodically taking several deep breaths and blowing them out completely also will help you to relax.

It is best to land on the heel of the foot and rock forward so that you drive off the ball of the foot for your next step. If this proves difficult, try a more flat-footed style. Jogging only on the balls of the feet, as in sprinting, will produce severe leg soreness.

Keep steps short, letting foot strike the ground beneath the knee instead of reaching to the front. Length of stride should vary with your rate of speed.

Breathe deeply, with mouth open. Do not hold breath.

If for any reason you become unusually tired or uncomfortable, slow down, walk, or stop.

What to Wear

Select loose, comfortable clothes. Dress for warmth in the winter, for coolness in the summer. Avoid clothing which restricts freedom of movement or impedes the return of the blood from the extremities. "Jogging suits" or "warmups" are not necessary, but they are extremely practical and comfortable, and they can help create a feeling of commitment to jogging.

Do not wear rubberized or plastic clothing. Increased sweating will not produce permanent weight loss, and such clothing can cause body temperature to rise to dangerous levels. It interferes with evaporation of sweat, which is the body's chief temperature control mechanism during exercise. If sweat cannot evaporate, heat stroke or heat exhaustion may result.

Properly-fitting shoes with firm soles, good arch supports and pliable tops are essential. Shoes made especially for distance running or walking are recommended. Ripple or crepe soles are excellent for running on hard surfaces. Beginners should avoid inexpensive, thin-soled sneakers. Wear clean, soft, heavy, well-fitting socks. Beginners may want to wear thin socks under the heavier pair.

Where to Jog

If possible, avoid hard surfaces such as concrete and asphalt for the first few weeks. Running tracks (located at most high school's), grass playing fields, parks and golf courses are recommended. In inclement weather, jog in church, school or YMCA gymnasiums; in protected areas around shopping centers;

or in your garage or basement. Varying locations and routes will add interest to your program.

When to Jog

The time of day is not important, although it is best not to jog during the first half hour after eating, or during the middle of a hot, humid day. The important thing is to commit yourself to a regular schedule. Studies show that people who jog early in the morning tend to be more faithful than those who run in the evenings. Persons who jog with family members or friends also tend to adhere to their schedules better. However, companionship—not competition—should be your goal when jogging with someone else.

Illness or Injuries

Take care to prevent blisters, sore muscles and aching joints. If you develop an illness, ask your physician or school physical education teacher about the advisability of continuing to jog. Any persistent pain or soreness also should be reported.

For school physical education classes the following sample training schedules are recommended:

GIRLS TWELVE WEEK JOGGING SCHEDULE

Distance	1	2	3	4	5	6	7	8	9	10	11	12
440 Yards	XX	XX	X	X								
660 Yards	XXX	XX	XX	X	X	X	X					
880 Yards		X	XX	X	XX	X	X	X	X	X	X	X
1100 Yards				XX	X	XX	X	X	XX	X	X	X
1320 Yards					X	X	XX	X	X	X	X	X
1 Mile								XX	X	X	X	X
1¼ Mile										X	X	X

BOYS TWELVE WEEK JOGGING SCHEDULE

Distance	1	2	3	4	5	6	7	8	9	10	11	12
660 Yards	XX	XX	X	X								
880 Yards	XXX	XX	XX	X	X	X	X					
1320 Yards		X	XX	X	XX	X	X	X	X	X	X	X
1 Mile				XX	X	XX	X	X	X	X	X	X
1¼ Mile					X	X	XX	X	XX	X	X	X
1½ Mile								XX	X	X	X	X
1¾ Mile										X	X	X

Ability Grouping

The ability range in most physical education classes will range from gifted to low-motor ability students. In this type of heterogeneous class organization, it is difficult for the instructor to accurately group the students by ability for class or individual instruction unless some type of objective evaluation is made. The value of an objective test lies in the fairness it affords to all students. When only subjective evaluations are used, the opportunity for student self-evaluation is eliminated. In many instances the student may then feel short-changed in that he has to compete with instructor opinion rather than his own performance.

The following test batteries have been developed to designate various color groups or teams. As the students reach the standards established for the various teams, they receive a color designation from their instructor. Students are encouraged to attain higher team status during regular class testing periods and at other times outside class that is convenient to both the student and the physical education staff.

TEST STANDARDS*

	White	Red	Blue	Bronze	Silver	Gold
Pullups	2	10	14	18	22	32
Pushups	16	32	48	62	68	150
Bardips	4	12	18	28	32	50
Situps (2 men)						
Shuttle Run						
Rope Climb	Hands/feet	Hands	9.5 sec.	8.5 sec.	7.5 sec.	2 Trips
(18") Stand Start						
Agility Run	21 sec.	20 sec.	19	18.5	18	17
880 Yard Run	3:30	3:15	3:00	Mile complete	2 Miles complete	5 Miles complete
Man. Life & Carry	44 Yds.	880	1320	1 Mile	1¼ Miles	5 Miles
Peg Board	3 Holes	1 trip	2 Trips	3 Trips	4 Trips	5 Trips
Swim	50 Yds.	100 Yds.	¼ Mile	½ Mile	¾ Mile	1 Mile

* All students would be designated members of the "Grey" team until they achieved any of the above classifications. For additional information on ability grouping, using the above concept, contact the President's Council on Physical Fitness and Sports.

The color teams, once designated, can be used for sports skill instruction, team play, leadership training, or any other number of purposes. Schools are encouraged to develop their own standards of performance to establish school tradition, records, etc. The classification standards given here are merely samples of what has been done.

Posture

Good posture is important for proper functioning of the body and contributes to good appearance. Proper alignment of the body parts promotes efficiency of movement and endurance. The person who has good posture and who moves gracefully projects poise, confidence, and dignity.

From a mechanical standpoint, in good posture the bones and joints are in position to take the stress of weight and movement, and the musculature is firmly balanced to hold the body organs in place. In poor posture the bones are out of line and the muscles and ligaments take more strain than nature intended. Besides being unattractive, faulty posture may cause fatigue, muscular strain, and, in later stages, pain. In some cases, poor posture affects the position and functioning of vital organs, particularly those of the abdominal region.

Muscular strength is essential to good posture, and it is important that such strength be well-balanced. Developing strength in certain muscles, without also strengthening the opposite muscles, will tend to distort alignment rather than promote good posture.

Flexibility depends on free joint motion and muscle length. Children tend to be very flexible, and it is natural that they lose some of this flexibility along with developing more strength as they grow older. It is not advantageous for the average young person or adult to have excessive flexibility.

To strengthen muscles, the muscle must contract. In so doing, they move the bones to which they attach closer together. For muscles to lengthen, they must relax, allowing the bones to which they attach to move away from each other.

While it is important to be able to shorten or to stretch muscles through a good range of motion, it is also very important that they not remain in shortened or stretched position continuously for long periods of time.

Basic to an understanding of muscular balance is the fact that muscles which remain in a somewhat stretched position tend to weaken, while those that remain in a somewhat shortened position tend to become tight and stronger than their opponents. Even if muscles are only slightly stretched or shortened, mus-

cular balance can be upset if they remain in this position continuously, or for long periods of time.

Habitual faulty posture means being in a position of poor alignment continuously, or at least most of the time. The result of an habitual faulty position is that an adaptive stretching or shortening of muscles takes place. These changes can be overcome by properly directed exercise and by practicing good posture.

Webster says "practice is the active doing of something in a systematic way," and that is exactly what is needed to restore good alignment.

It is important that postural exercises be done slowly and held for several seconds. They are designed not only to strengthen certain muscle groups, but also to help develop the "feel" of good posture. When this "feel" has been mastered, it should be practiced often until it becomes a habit.

Along with exercises to strengthen some muscle groups, it is important to omit—temporarily—certain exercises which would tend to increase the faulty alignment. After the weak muscles have been strengthened and have enough endurance to help maintain good position, the exercises that have been temporarily omitted may be resumed but should not be done to excess.

In the selection of all exercises and activities care should be taken to maintain a balance in strength of all muscle groups so as to keep the body in good alignment.

The school's responsibility for promoting good posture is twofold:

- Inspection.
- Instruction.

The **inspection** of pupils' posture should be included routinely in the health apraisal. Children should be checked individually while wearing suitable attire—shorts for boys and shorts and halters for girls. Co-operation of school and parents is important to thorough posture inspection.

The school—and the teacher—also should be concerned with **instruction** of pupils in the elements of good posture. If children are taught to maintain correct alignment at an early age, it is possible to avoid many of the faults, and their resultant problems, that tend to occur as children grow older.

Most school-age children are capable of assuming good posture. Whether they maintain it most of the time depends on motivation, proper muscular balance, and the development of good posture habits. Motivation must be accompanied by guidance in the right direction. Overzealous or misdirected effort on the part of the teacher or the subject may result in exaggerated posture or negative attitudes.

Suggestions for the Teacher

- Know the reasons for good posture and be able to describe the elements of good posture in simple terms.
- Set an example by practicing good posture.
- Learn to recognize the common faulty postural tendencies.
- Avoid exaggeration of postural positions that cause distortion of good alignment.
- Recognize the fact that posture is flexible. While it is desirable to maintain a good position of the body most of the time, it is not harmful to assume relaxed positions at times.

FRONT VIEW

Good Posture

Head is held erect, not turned or tilted to one side.

Shoulders are level.

Arms hang easily at the sides with the palms of the hands toward the body.

Hips are level, with the weight of the body borne equally by both legs.

Kneecaps face straight ahead.

Feet point straight ahead or toe out slightly. In other words, they may be parallel, or the feet may be about 1 inch further apart in front than at the heels.

The weight of the body is carried toward the outer sides of the feet, and evenly balanced between the heel and the forefoot.

Good posture must be built from the feet up. If the feet and knees are in good position, there is a better chance that the rest of the body will line up properly.

BACK VIEW

Good Posture

Head is straight, not turned or tilted to one side.

Shoulders are level.

Shoulder blades are flat against upper back, not protruding or winged, not far apart or squeezed close together, and not hiked upward.

Arms hang easily at sides, palms of hands toward body.

Spine is straight.

Hips are level, weight even on both legs.

Legs are straight.

Heel cords are straight.

Stability of the hips from side to side requires good strength of the muscles over the outside of the hips. These muscles

are strengthened by leg-raising sideways from lying or standing positions.

SIDE VIEW

Good Posture

Head is erect and back, chin above the notch between the collar bones, with a slight forward curve in neck.

Shoulders are in line with the ear.

Arm hangs easily at the side.

Upper back is erect.

Chest is held moderately elevated by holding the upper back erect.

Abdominal wall is flat.

The low back is held in good position (curved slightly forward).

Hips are midway between forward and backward tilt.

Knees are straight but "easy," not bent, pushed back, or stiff.

Feet are pointed straight ahead or toe-out slightly. Weight is carried over the arch, evenly balanced between the heel and forefoot.

POSTURE IN SITTING

To sit erect, but also be at ease, the type and size of the chair must be suited to the individual. A person can rest back against a straight-back chair and be in good posture.

Sitting "slumped" puts a strain on many parts of the body, especially the back. (Besides, it puts a strain on the people who have to look at you!)

Sitting up too straight, arches the low back too much. A person cannot sit at ease in this position.

Let your posture in sitting be graceful, never disgraceful!

Sit with knees together and feet flat on the floor, or with feet crossed, or at times with knees crossed. If the knees are crossed, one over the other, they should be alternated so they are not always crossed in the same manner.

While some people, especially those with problems of poor circulation in the legs, should avoid sitting with knees crossed, there is good reason why so many people sit this way. Unless a person is sitting in a chair that gives adequate support to the low back, there is a tendency, when he tries to sit erect, for the hips to tilt forward to the point of arching the low back. If the knees are crossed, the hips cannot tilt as far forward, and the hips and low back are in a more stable position.

Perhaps the social disapproval of ladies sitting with the legs crossed stems from the era when it was considered unladylike to show the ankles. Today, it is almost a necessity to cross the leg in order to get the skirt down to the knees!

Descriptive Comments to Help Promote and Maintain Good Posture

- "Stand tall. Remember that the tallest distance between your head and your hips is a straight spine, but slight curves are normal. To check for normal curves of the spine, stand with your back to a wall, heels about 2 inches from the wall. Place one hand behind your neck with the back of the hand against the wall, and the other hand behind your low back with the palm against the wall. Now your entire back should touch either your hands or the wall."
- "Let your arms hang easily at your sides as you draw your shoulder blades back. Do not push your elbows back beyond the side line of the body."
- "The position of your hips controls the position of the low back. Keep the hips midway between forward tilt and backward tilt to maintain the normal curve in the low back. Belts on trousers or skirts should be parallel with the ground."
- "The position of your upper back controls the position of your neck. The head tends to stay level (because eyes seek eye-level) but if the upper back slumps the neck curves forward. If the upper back is straightened, the curve in the neck tends to return to normal."
- "The position of your upper back also controls the position of the chest. As you straighten your upper back, your chest is raised into good position. Do **not** try to bring your chest up by arching your low back. It **must** be done by your upper back."
- "Place weight evenly on both feet."
- "Keep both knees straight, not bent or pushed back."
- "Stand in front of a mirror and try to make hips level and shoulders level."

In restoring or maintaining good posture, certain idiomatic phrases may be used to describe required activity. Specific description in these instances is preferred to a "catchall" phrase.

A posture chart should be used to record postural faults so that proper corrective measures may be taken.

Circuit Training

Circuit training is a modern method of physical conditioning which offers an interesting and exciting challenge. Equipment and facilities are utilized in ways which permit the participant to get a complete workout and engage in a variety of activities in a limited time. Circuit training gets its name from the fact that the participant makes one or more trips around a prescribed course, stopping at each station along the way to perform various exercises..

Circuits can be set up without equipment, but gymnasium, playground and athletic apparatus generally is used. The difficulty of the circuit can be increased or decreased to fit the needs of individuals or groups. If equipment and exercises are properly selected, a 10 or 12-station course can be used to condition the cardiorespiratory system and all of the body's major muscle groups.

RUNNING FOR CHILDREN

Children aged 6—12 who have normal health are as capable of running as older people. They have physiological responses that are comparable to those of young adults in the following areas: oxygen intake to tne blood stream based on body weight; air breathed into the lungs per minute while exercising, and maximum heart rate during exercise. There are many examples of boys and girls of this age who run for physical fitness purposes and run to condition for competition.

Children should be taught jogging and running techniques and should participate in planned, progressive programs which follow appropriate guidelines. Another important element for this age is learning pace. Most children think of running only to beat someone in a race or to get somewhere in a hurry. Paces which should be included so children learn to judge their speed and can then follow paces for a long enough period of time to have a training effect are walk, jog (10—25% effort), run (40—50% effort), and sprint (all-out effort).

Part III – A Comprehensive Program of Health and Physical Education

While elaborate facilities are not necessary to conduct programs which produce developmental outcomes, it should be recognized that achievement is directly related to standards governing the administration of the program. Good physical education programs produce good results.

This fact was proved conclusively in a 5-year study covering 2,648 high schools in 25 States. Pupil achievement in course objectives was directly proportional to the quality of the program. Other studies reveal similar results.

Communities should not gear their thinking to minimum achievements. Rather they are urged to make every effort to develop superior school programs of health and physical education.

ADMINISTRATION STANDARDS

Boards of education and school administrators should give increasing attention to the strengthening of programs of school health and physical education, emphasizing physical fitness. They should remember that an effective instructional program is best accomplished with teachers and leaders who have proper professional preparation. Specific recommendations follow:

HEALTH EDUCATION

1. Schools should provide a curriculum based upon the health needs of children and youth. It should provide for progression in student health learnings.
2. Regular instruction in health and safety education should be offered in all grades of the elementary school and appropriate texts and instructional material.
3. Specific courses in health and safety education should be offered in the junior and senior high school and appropriate texts and instructional materials provided.
4. All elementary classroom teachers should be properly prepared to teach health and safety education.
5. Health education teachers at the secondary level should have a major in health education or an undergraduate minor

in health education supplemented by additional graduate study in that field.

6. Schools should utilize the health resources within the community and State to strengthen the instructional program. These include official and voluntary agencies and professional groups such as medical and dental societies.

7. A member of the school faculty should be designated to coordinate the total health education program.

8. In-service education should be provided to continually improve teacher competencies in health education and to keep up to date with scientific and educational developments.

PHYSICAL EDUCATION

1. Evaluation of pupil progress in terms of stated objectives.

2. Marking and credit for physical education comparable to other subject matter areas.

3. A text book for pupil use in physical education in grades 7-12, as well as other reference materials and teaching aids.

4. No substitution of band, ROTC, athletic programs or other extra-class activities for physical education class work.

5. For grades 1-6, one period per day, 5 days each week, minimum 30 minutes, exclusive of recess and time spent in dressing and showering.

6. For grades 7-12, one standard class period per day, 5 days per week.

7. Maximum class size not to exceed 35 pupils unless special organization and leadership makes possible the effective handling of larger groups.

8. Teaching load not to exceed 200 pupils per day, with adjusted work load for those who direct extra-class and complementary programs.

9. Sufficient teaching stations to handle one-sixth of the pupil population at one time. These should include gymnasiums, swimming pools, tennis courts and other indoor and outdoor facilities.

10. Sufficient dressing, drying and shower rooms and toilets provided for grades 4-12.

11. Sufficient instructional and fitness testing equipment and supplies so that all pupils can be kept active in each class.

12. Qualified specialists should teach physical education to both boys and girls in secondary schools. Where classrooms are responsible for physical education in elementary schools, adequate consultative assistance by a specialist should be provided.

RECOMMENDED EXTRA-CLASS PROGRAMS

It is recognized that the daily instructional period of physical education can only partially meet pupil fitness needs. Therefore, additional opportunity should be provided for participation and competition in fitness producing activities. Such experiences should be available to all children through:

1. Intramural sports for all boys and girls in grades 4-12. These programs should be conducted under competent leadership. The extended school day, noon hours, week ends and the vacation periods should be replete with a variety of organized teams, leagues, tournaments, games and special features. They should be skillfully planned and be as attractive and valuable to the pupils as the interscholastic sports program.
2. Interscholastic athletics should be available for the athletically gifted youth. All pupils should be encouraged to participate in intramurals and/or extramurals with the gifted emerging into a well controlled, educationally sound interscholastic program. Opportunities should be broadened to include more sports, more teams, more participants.
3. **Sports and fitness clubs** for both boys and girls should be organized in such activities as hiking, cycling, camping, skating, skiing, aquatic activities, gymnastics, dance, and shooting. These and other activities can be incorporated into school and community recreation programs. Cooperation between school and public recreation programs is important.
4. **Opportunities for informal physical recreation** should be encouraged, and sponsored by schools at all available periods.

SUGGESTIONS FOR COMPLEMENTARY PROGRAMS

School and community recreation programs conducted by tax-supported agencies should provide diversified programs to further meet the total needs of youth. Many of the program elements can make significant physical fitness contributions.

Voluntary youth-serving agencies have valuable contributions to make to the full range of experiences needed by youth.

Schools should provide opportunities for post-school youth and adults of the community including the school faculty to develop and maintain desirable levels of physical fitness. This can be done through special adult education classes and by extension of the community-school program.

Colleges and universities with qualified and research facilities should be encouraged to become training centers for the development of leadership in health and physical education. Institutes for the training of local, State, and regional leaders should be conducted. These centers would be in a strategic

position to accelerate the physical fitness movement through research and development programs.

There is a trend toward the establishment of community schools. These schools utilize their leadership, facilities, and other resources to serve both the education and recreation needs of the entire community. It is important, of course, that the schools establish an effective working relationship with the other agencies in the community. The school is frequently the logical agency to take the initiative in forming a school-community health and fitness council. In some instances, existing councils or committees can assume the added responsibility for health and fitness. In others, new coordinating bodies may be developed but duplication of such groups is to be avoided.

CURRICULUM SUGGESTIONS

All schools are urged to provide a comprehensive program of physical education and health education, including safety education. Such a program would include the identification and improvement of physically underdeveloped youngsters.

HEALTH EDUCATION

Direct instruction relating to specific health concepts and problems should be provided at every grade level. The topics treated should be in keeping with the interests, needs, and maturational level of the children as they progress grade by grade. Such direct instruction would be augmented by the teaching of healthful and safe behavior through the health appraisal procedures, by capitalizing on interest-arousing events, by correlating health and safety with other subjects, and by other means.

Grades 1–3; Ages 6–8

At this level, much of the child's health learning relates to developing good practices in daily living at home, in the school, and in the community. Health needs include attention to cleanliness; nutrition; sleep, rest, and relaxation; healthful physical activities; acquaintance with the dentist, nurse, and physician; learning about community health agencies; care of the eyes, ears, and teeth; and elementary concepts of prevention and control of disease.

Grades 4–6; Ages 9–11

Increasing attention is given to the understanding of **why** health practices should be followed. Elementary treatment of the scientific bases of healthful and safety behavior is carried forward. New units are introduced on the body structure and function, simple first-aid procedures, elementary principles of mental and emotional health, and other topics.

Grades 7–9; Ages 12–14

Direct instruction in health and safety should amount to at least one semester of five regular periods per week during the 3 years. At this level, heavier emphasis should be given to the physiological and other scientific bases and to the use of the scientific method in solving health and safety problems. The focus should be on problems of adolescence and should include units on: growth and development; differences in rate of growth; physical maturation; acne and skin disorder; effects of maintaining an adequate diet; use of tobacco, alcohol, and other drugs; getting along with parents; establishing friendships; desirable relationships with the opposite sex; introduction to vocations, including health careers; importance of exercise and physical forms of recreation; and other related topics.

Grades 10–12; Ages 15–18

Instruction centers around problems of adult living and of family and community health. Important topics include: emotional health; chronic disease, such as heart disease, cancer, diabetes, and mental illness; instruction concerning consumer health (intelligent utilization of health services and products); national and international health organizations; health careers; health and safety aspects of civil defense; safety in the home, in transportation, recreation; more advanced first aid; the role of exercise in developing and maintaining health and fitness; exercise and weight control; health problems relating to alcohol, tobacco, and narcotics.

Adequate coverage of these topics requires, at a minimum, the equivalent of a full semester of daily periods of regular length. Two full semesters are recommended.

PHYSICAL EDUCATION

The physical education curriculum should include a core of physical fitness activities designed to develop strength, speed,

agility, balance, coordination, flexibility, muscular endurance, good posture and body mechanics, and organic efficiency. Activities and exercises should affect all parts and systems. The curriculum should also include a broad scope and balance of physical activities that promote well-rounded physical, social, and intellectual development. Activities should become progressively more complex in organization and skills, and more demanding of physical development and control grade by grade.

The programs should be adapted to the needs, interests, and capacities of each child and youth, including those pupils, who for physical and other reasons, are unable to participate safely and successfully in the general program. All pupils should be motivated to achieve high levels of physical fitness, compatible with their capabilities.

Grades 1–3; Ages 6–8

Emphasis should be placed upon learning the fundamentals of movement with and without equipment and building a foundation of physical fitness.

Walking, running, hopping, skipping, balancing, jumping, sliding, catching, climbing, hanging, throwing; elementary rhythmical activities, creative movement experience, and simple games which set the stage for later, more complicated activity skills; activities on the jungle gym and other types of playground equipment; simple stunts and tumbling; elementary swimming wherever possible—all of these activities and more should be included. Active participation and vigorous movement should be highlighted.

Grades 4–6; Ages 9–11

The "fitness core" should have continued emphasis, giving particular attention to development of the back, chest, shoulders, and arms. This age group is ready for elementary calisthenics. Class instruction should include fundamentals of sports skills in several team sports, track and field, and simple forms of individual and dual sports. Opportunity to practice the skills and to gain knowledge in organized games should be provided.

Folk dances and other rhythmical activities are important as are relays, simple games involving running, tumbling, simple gymnastics and intramurals. Vigorous outdoor activities such as skating and cycling should be encouraged.

Screening for physical capacity as well as physical achievement testing should begin at this level and continue periodically thereafter. Simple tests of skills and knowledge should also be used.

Grades 7–9; Ages 12–14

The physical fitness core should include advanced conditioning and developmental activities, e.g., weight-resistance exercises, and the activities should increase in intensity, frequency, and distance. The wide range of individual differences among these youngsters in prepubertal and pubertal stages of development should be noted and programs adjusted accordingly.

The curriculum should include a broad range of offerings in sports and other activities. Emphasis should be given to a skillful participation in team sports and increasing attention to individual and dual sports that carry over to recreation hours. Intramural and extramural sports programs should be conducted.

Folk, square, and social dancing are important activities for this age group. Also to be highlighted are stunts, tumbling, gymnastics, and trampolining; aquatics (wherever feasible), with emphasis on survival tactics; combative activities, e.g., wrestling (for boys) and self defense; and outing activities, e.g., hiking, camping, and hunting.

Grades 10–12; Ages 15–18

The fitness core continues to be stressed with more opportunities for individual leadership provided.

The broad program is carried forward with particular emphasis on sports, rhythmics, coeducational and other activities that carry over into recreation hours throughout life. Specialization in such activities should be encouraged. Ways of maintaining physical fitness at various age levels under varying circumstances should be taught. Additional attention should also be given to outing activities and recreational activities for the family unit, particularly those that promote physical aspects of fitness.

Building Community Support

The recent history of the educational scene in the United States is placing a continual demand on evaluation of programs and listing curriculum priorities. It behooves every physical educator to develop an ongoing program for the purpose of creating public awareness in the value of physical education as an integral and vital part of the total school program. Physical educators can no longer assume public understanding and sup-

port. On the contrary, interpretation of program objectives and content has become an essential element in maintaining local support for strong programs. This responsibility does not belong exclusively to school administrators or department chairmen. It should be a responsibility equally shared by every member of the professional staff.

There are two general areas which deserve attention in developing support: The internal school community and the larger community.

DEVELOPING INTERNAL SUPPORT

There is no substitute for strong programs, dedicated teaching and constant evaluation. However, there are many other opportunities to develop support among students, faculties and school administrators which are often overlooked. Such activities as school assemblies, physical education "Play Days," joint activities with other departments (i.e., art, music, science, etc.), school newspaper articles can all be substantial aids in creating understanding among students and faculty.

In many situations, physical educators are isolated from the remainder of the faculty during the regular school day, due to the location of their teaching environment. This can lead to communication weakness and lack of adequate intra-faculty rapport and understanding. An aware and sensitive physical education staff will make whatever adjustments necessary to overcome this simple and often conflict producing situation.

DEVELOPING EXTERNAL SUPPORT

Athletic coaches have traditionally been extremely successful in developing community support and understanding through their constant exposure to the public's eye. This element of public relations can also be successfully incorporated into the physical education program. Such activities as physical education demonstrations designed for service club programs, P.T.A. presentations, Sports-A-Rama, and other similar activities can provide valuable foundations for building community support.

INTERPRETING PHYSICAL EDUCATION
Suggestions for Teachers and Supervisors

During the past 10 years Council staff members have observed physical education programs in hundreds of schools in all 50 States. Outstanding programs, good programs, average

programs, and inadequate programs. The programs rated "outstanding" and "good" usually enjoy strong community support. Usually, but not always.

Most good programs seem to have public support not merely because they are good, but because the dedicated individuals who run them feel a responsibility to "sell" their programs to their various audiences: students, fellow faculty members, the school administration, and parents. In other words, even the most able physical educator must, like everyone else, "blow his own horn" to get attention.

We are not suggesting that teachers ignore program quality to concentrate on salesmanship. We are suggesting they recognize that community support is not an automatic result of good programs. It must be conscientiously developed and cultivated. This pamphlet contains suggestions for telling physical education's story more effectively.

THE STUDENT AS 'SALESMAN'

Effective public relations begins with a good relationship between the teacher and his students. There are no better salesmen for physical education than students who understand and enjoy their experiences in physical education; students who relate what they do in class to personal health, performance and appearance; students who learn useful skills; or students who see positive changes in themselves as a result of physical education activities.

Even students who appear to be non-competitive are interested in their own improvement and will recall a few years later that they broke six minutes in the mile run or did 11 pullups during physical fitness testing. To help assure favorable experiences for all students, the teacher should emphasize competition against self. One way of keeping students aware of their progress is to time or measure all performances involving running, swimming, jumping, challenging courses, etc. More than most subjects, physical education can offer the student tangible evidence of his improvement.

The enthusiastic teacher can communicate his enthusiasm to the student. Students appreciate the kind of planning, organization and leadership which gets maximum benefit from the limited time available. One high school boy expressed a favorable attitude toward physical education when he remarked: "Mr. Jones means business. He runs his physical education class the same way he runs football practice."

Parental attitudes toward physical education are largely derived from student attitudes. A chance remark at the dinner table about a teacher who is obese and can't demonstrate skills,

or a comment on lack of organization and goals, can be devastating to program support. On the other hand, a parent who hears that his child is making fitness gains, or who hears that "we learned this today" instead of "we played that today," has an immeasurably better opinion of physical education.

Experience indicates that most persons seriously question the value of physical education programs which are largely recreational play. Programs which produce gains in knowledge, skill and physical fitness are much more likely to receive support.

PUBLICIZING THE PROGRAM

The mass communications media—newspapers, radio and TV—offer many opportunities for enhancing physical education's image and cultivating support. Again, programs which are achievement- or goal-oriented have a big advantage over recreational type programs. The number and names of students winning Presidential Physical Fitness Awards, or a comparison of local fitness scores with State and National averages, are news in most communities. So are reports on programs which serve the handicapped and retarded, or programs which teach useful skills such as swimming and drown-proofing.

It usually is helpful to assign responsibility for program publicity to a staff member with interest and aptitude in the activity. All releases should be coordinated with school and/or district public information officers, since they may have additional resources and contacts which will be useful.

Periodic reports to the Principal, Superintendent and Board are another means of interpreting the physical education program. Others include leaflets (explaining the scope and objectives of the program) which students take home to parents; photographic displays in window space provided by local merchants; interesting pictures and charts posted on school bulletin boards; display boards (in school gymnasiums or trophy cases) listing physical fitness record-holders; and color slides or movie film for use in presentations to PTA's, service clubs, fraternal organizations, etc.

An opportunity often overlooked by the physical educator is the local radio or TV "talk show." Such shows are an excellent forum for detailed discussions, and physical education has many friends in medicine—pediatricians, orthopedists, cardiologists, psychiatrists, etc.—who can contribute to interesting and informative presentations.

EXHIBITIONS AND DEMONSTRATIONS

Physical education still is widely misunderstood. Many older

persons never participated in a formal physical education program. Other adults, such as those who are poorly coordinated, or those who were victims of lackadaisical teachers, may have bad memories of their physical education experiences. Regular exhibitions and demonstrations can help acquaint these persons with the scope, objectives and methods of the physical education program and thereby correct any false impressions that exist.

Exhibitions at school assemblies and at the intermissions of athletic events are perhaps the best means of reaching the administration, fellow faculty members and students. Special "days" or "nights," which may be conducted by a single school, or on a city-wide or district-wide basis, are effective for taking the message to the public. On April 13, 1972, the Norfolk, Virginia, City Schools conducted a special Physical Education Night involving 1,500 pupils and 86 teachers from 70 schools. More than 12,000 persons jammed into the community's new sports arena to watch 20 major activities, and one of them called it "the most impressive exhibition I've ever seen."

The Council recommends that each secondary school conduct at least one demonstration annually, apart from the usual Back to School Night. Since experience indicates that such demonstrations attract approximately three adult spectators for each student participant, it is important to involve as many students as is practical.

Following are five examples of demonstrations which schools or districts are using to tell their stories effectively.

1. Sports-A-Rama (single high school)

The program described here is presented by the boys' physical education department and annually attracts a capacity crowd. Donations collected during the event are used to assist in the purchase of physical education supplies and equipment.

Competing teams are formed by the four grades of the school. Seniors are identified by their green trunks; Juniors, gold; Sophomores, blue; and Freshmen, red. Teams are judged according to precision and appearance in marching on and off the floor and during the warmup. First is awarded 50 points; second, 30 points; third, 20 points; and fourth, 10 points. Decoration of their assigned sections of the bleachers by classes is awarded: first, 100 points; second, 60 points; third, 40 points; fourth, 20 points. Cheering and enthusiasm of classes is awarded: first, 100 points; second, 60 points; third, 40 points; fourth, 20 points. Activities in their 1-hour, 45-minute program are:

7:30-7:35 Grand March and Warmup ..... All classes

7:35-7.50	Sports-A-Rama Song	Song leaders
7:40-7:45	Volleyball (10 points)	Seniors vs Juniors (6 men on a team)
7:45-7:48	Wheelbarrow Relay (10 points)	Sophomores vs Juniors (8 men on a team)
7:48-7:51	Basketball Relay (10 points)	Seniors vs Sophomores (8 men on a team)
7:51-7:54	Knee Basketball (10 points)	Juniors vs Sophomores (3 men on a team)
7:54-7:57	Standing Jump Relay (10 points)	Freshmen vs Sophomores (8 men on a team)
7:57-8:00	Tumbling Relay (10 points)	Seniors vs Freshmen (8 men on a team)
8:00-8:05	Tug of War Single Elimination Freshmen vs Juniors, Sophomores vs Seniors	All classes (40 men on a team)
8:05-8:08	Dizzy Izzy Relay (10 points)	Seniors vs Sophomores (8 men on a team)
8:08-8:11	Sack Race (10 points)	Freshmen vs Juniors (8 men on a team)
8:11-8:14	Crab Race (10 points)	Seniors vs Freshmen (8 men on a team)
8:14-8:19	Push Ball (10 points)	Juniors vs Seniors (8 men on a team)
8:19-8:22	Barrel Relay (10 points)	Freshmen vs Sophomores (8 men on a team)
8:22-8:25	Stroke-the-Boat Race (10 points)	Juniors vs Freshmen (8 men on a team)
8:25-8:35	Pyramid Building Judged on organization, difficulty, achievement and number of students used. 1st—100 points; 2nd—60 points; 3rd—40 points; Entry—20 point.	All Classes
8:35-8:55	Individual Contests 1st—10 points; 2nd 6 points; 3rd — 4 points; Entry — 2 points.	All Classes

8:35-8:45	Group A	Weight Lifting Tire Wrestle Bulldog Pull Tumbling Rope Climbing
8:45-8:55	Group B	Indian Wrestle Free Throws Bar Dips Elbow Wrestle Pullups
8:55-9:10	Obstacle Race	All Classes
	1st—10 points; 2nd—40 points; 3rd—30 points; Entry—20 points.	
9:10-9:15	Presentation of Sports-A-Rama Trophy by Principal.	

2. Physical Education Night (11 high schools)

This demonstration, staged in a college gymnasium, involves approximately 400 students and attracts an average of 2,000 adults.

Calisthenics	Girls and boys
Folk Dances in Native Costumes	Girls
Relays (Circular and Shuttle)	Boys
Tumbling and Gymnastics	Girls and boys
Modern Dance	Girls
Circuit Courses	Boys
Agility Response Drills	Boys

3. Tribute to Physical Education (school district)

Approximately 800 students and 50 teachers participate in a 90-minute program which draws up to 3,000 spectators.

Prelude—High school band.

Presentation of Colors—AFROTC.

Introduction of dignitaries and members of district board of education by Coordinator of Physical Education.

Introductory remarks by State Physical Education personnel.

Description of demonstrations and narration during activities by District Consultant in Physical Education and State Physical Education Chief.

Demonstrations (Elementary Schools):

Gymnastics (Primary)	Creative Rhythms
Ball Handling Skills	Circuit Training
Balance Beam	Movement Exploration
Vaulting Box	Gymnastics (Intermediate)
Grass Drills	Parachute Play
Astronaut Drills	Stretch Ropes
Physical Fitness Development	Special Education Techniques
German Free Movement	Folk and Square Dancing

Demonstrations (Secondary School Girls):

Junior High — Free Exercise, Tumbling
Junior High — Modern Gymnastics
Junior High — Modern Dance, Aerial Tennis
Junior High — Jump Rope
High School — Gymnastics Apparatus, Circuit Training
High School — Golf, Badminton

Demonstrations (Secondary School Boys):

Junior High — Pre-Tennis
Junior High — Rope Climbing, Tumbling
Junior High — Wrestling, Handball
Junior High — Physical Fitness Testing
High School — Gymnastics Apparatus, Physical Fitness Conditioning
High School — Weight Training, Archery

4. Sports-A-Rama (citywide)

This program, involving 1,200 fourth, fifth and sixth grade pupils, attracts a Sunday afternoon crowd of 3,800. The following five individual events are run off simultaneously.

25 yard dash	Reach and jump	Pullups
Rope Climb	Standing broad jump	

Each youngster is limited to one event. Three team events are run off in heats of three teams each. In the shuttle relay, obstacle relay, and tug-of-war, teams are composed of two boys and two girls. Each team member, in succession, completes these activities in the obstacle relay:

Run 25 yards
Climb through an automobile tire
Walk a balance beam
Climb over a 5′ Swedish vaulting box
Hurdle a 2′ crossbar
Climb a 15′ rope
Reverse the entire course.

The tug-of-war team is composed of three boys and three girls.

Among the 50 adults who assist in the meet's administration are coaches from all of the junior and senior high schools, which improves working relationships between elementary specialists and secondary school personnel.

5. Sports-A-Rama (all county schools)

The demonstration described here, which is conducted in a college gymnasium, involves 500 elementary and secondary school students.

7:30-7:33 Sports-A-Rama Song
7:33-7:43 Calisthenics
7:43-7:46 Physical Performance Test
7:46-8:00

Court	Game	Court	Game
1	Netball	5	Deck tennis
2	Semi-volleyball	6	Volleyball
3	Volley tennis	7	Paddle tennis
4	Pushball	8	Badminton

8:00-8:05 Body Mechanics (Posture)
8:05-8:10 Crossfire (dodgeball game)
8:10-8:15 Scrimmage (basketball leadup game)
8:15-8:18 Passball (football leadup game)
8:13-8:21 Pushball
8:21-8:35 Dance and Basic Rhythms
Primary (fundamentals and creative)
Intermediate (folk and contra)
Upper grades (social)
8:35-8:40 Rope Climbing
8:40-8:50 Base Games (baseball leadup games)
Primary—Homeball
Intermediate—Kickball and teeball
8:50-8:56 The Dance
Intermediate (Interpretive)
High School (Modern)
8:56-9:05 "Rasslin" and Wrestling
9:05-9:30 Tumbling and Trampolining

WHAT PHYSICIANS SAY ABOUT PHYSICAL EDUCATION

On May 26, 1971, the President's Council on Physical Fitness and Sports, at its quarterly meeting, unanimously adopted a recommendation that all school children in Grades K-12 should be required to participate in daily programs of physical education emphasizing the development of physical fitness and sports skills. This recommendation reaffirms the previous position of

the President's Council on Youth Fitness in 1961, which recommended that daily physical education classes be given to all students: (1) elementary—30 minutes per day, exclusive of recess and dressing time; and (2) junior and senior high schools —one standard class period per day.

Traditionally, national medical and physical education leaders have recommended daily physical education classes to partially satisfy exercise needs of school youth. Significant positions follow:

1. In 1946 the Joint Committee of the American Medical Association and the National Education Asoociation recommended daily physical education classes—
   a. Elementary School—two periods per day of 30 minutes minimum—one in the morning for instruction and one in the afternoon for supervised activity.
   b. Secondary School—sufficient time for dessing, showering and for a minimum of 30 minutes activity. Recommends that the daily physical education period be supplemented by effective intramurals involving all students.
2. The American Medical Association by resolution, several times recently, urged its various divisions and departments and its constituent and component medical societies to do everything feasible to encourage effective daily instruction in physical education for all students.
3. A joint committee of the American Medical Association and the American Association for Health, Physical Education and Recreation recommended from 30 minutes to an hour of daily vigorous activity as a minimum.
4. In 1964, an eminent national medical jury of the President's Council on Physical Fitness unanimously recommended that physical education involving vigorous exercise adapted to individual needs and capacities is so essential to optimum growth, development and health of pupils that it should be required daily in kindergarten, grades 1 through 6, junior high schools, and high schools. The jury unanimously recommended that the President's Council on Physical Fitness continue its position of strongly urging all States, schools districts and schools to require and provide daily physical education classes involving vigorous activities for all pupils.

Extracts of supporting statements for physcial education made to the Council by physicians follow:

Fred Allman, Jr., M.D., Atlanta, Ga.

"I feel very strongly that physical education should be re-

quired for all children, grade one through grade twelve.

"Socioeconomic changes which have taken place in the past 20 years have placed a new responsibility on physical education programs and instructors. Recent medical research has indicated that degenerative disease and increased mortality are associated with a sedentary life and that physical fitness improves physiological efficiency and results in an increase in endurance, strength, and agility. People who exercise regularly live longer and are less likely to suffer from degenerative diseases. Good health habits must be learned and practiced during the adolescent years and carried out all through life."

John L. Boyer, M.D., San Diego, Calif.

"Cardiovascular disease (coronary artery heart disease and hypertensive vascular disease) is the end result of a long process that begins in childhood. This has been shown repeatedly by autopsy studies of young individuals in their 20's in which demonstrated cholesterol plaque formation has been noted in the coronary arteries of individuals in this early period of life. In addition we see coronary heart attacks very commonly in the 40's and very frequently in the 30's and with progressively more frequency in the late 20's. Coronary heart disease, with its end result of a heart attack, is responsible for 700,000 deaths in this country each year. Thus, if we are to make effective changes we must provide our children with vigorous daily physical education at an early age, continue dynamic programs through the junior high school level and through the secondary school system. In addition, proper emphasis must be placed in the school curriculum on proper nutrition, anti-smoking information and the values of family-type recreation.

"It is not an easy task to change the established patterns of our schools. First of all, it will require education of teachers and administrators in order that changes can be brought about. It also will require education in the home, for the responsibility is not exclusively that of the schools. It will require changes in the lifestyle of parents and the family. It is an immense task, but it must be started if we are to make any effective changes in the disease which is now almost epidemic in the 20th Century."

David B. Carmichael, M.D., La Jolla, Calif.

"I strongly support daily physical education which would ensure vigorous exercise and recommend it be required in all schools for all students.

"The available clinical and research evidence documents the

need for continuing vigorous physical activity in youth, and continuing into adulthood. We now are seeing more citizens of the United States die from cardiovascular diseases than from all other causes of death combined. The vast majority of these deaths—more per year than the population of San Diego—are from coronary artery diseases. Evidence has slowly accumulated that along with tobacco, diet, and spiraling stresses, the sedentary living habits our material advantages have afforded us contribute heavily to this problem.

"As a physician there are additional reasons why I am anxious to see a program of daily physical conditioning in our schools. This hour of each day allows our young people to have a badly needed break from the intellectual demands the intensive academic curriculum places on them. They need to run and jump and yell. They also need to be given the rudiments of personal hygiene and some need to have an opportunity to shower."

Don B. Chapman, M.D., Houston, Texas

"Daily physical exercise should be maintained throughout the greater portion of one's life. The incidence of cardiovascular disease is greatly reduced in those who keep themselves physically and mentally fit. A strong physical fitness program should be carried out through elementary school, junior high and senior high schools. We are all aware of the necessity of disciplining our minds and by the same token we should be well aware of the importance of discipline to our bodies. If physical fitness programs were withdrawn from the schools, there would be a large group who would voluntarily choose not to participate in group physical activities and a very important aspect of their development would be lost forever."

J. Roswell Gallagher, M.D., New Haven Conn.

"Comprehensive daily programs of physical education are both necessary and beneficial to the present and future health and well-being of our youth.

"The relationship of regular periods of physical activity to health is clearly established. The control of obesity and diabetes, the possible prevention, delay or reduction of severity of heart disease and other degenerative processes, the rehabilitation of injured or damaged limbs and muscles, all of which may be considered present or future problems of youth. The AMA Committee on Exercise and Physical Fitness recognizes the preventive, as well as corrective aspects of exercise and wishes to emphasize the former in regard to the maintenance

of health. It also recognizes the contribution of daily periods of physical education to the health of school age children.

"Activity programs which are limited to infrequent or irregular sessions are not in the best interest of school children. Young people subjected to inadequate physical education experiences tend to develop negative attitudes toward exercise. In addition to the difficulty of attaining suitable levels of dynamic and emotional fitness, problems of class size and organization are to be considered. It is apparent that, in attempts to service large school populations by scheduling long, infrequent periods of activity, classes too large for adequate instruction, supervision, safety precautions, use of facilities and amount of activity can result. Under such conditions, the opportunity for students to develop the wholesome health practices and attitudes that should be normally associated with physical education are absent."

David Gelfand, M.D., Philadelphia, Pa.

"I support the recommendation of the President's Council on Physical Fitness and Sports for daily physical education in schools for all pupils. Regular habits of exercise, begun early in life and continued throughout the school years, will result in continued benefits in adult life. These habits may have a definite influence in preventing the deleterious effects of aging manifested by atherosclerosis, such as heart attack and stroke. If this is not prevented, then its onset may be delayed or there is a better chance of recovery."

Hans Kraus, M.D., New York, N.Y.

"I feel very strongly that vigorous physical exercise for at least one hour is essential as a preventive measure for sickness and disability in later life.

"I strongly recommend that the time in physical education be spent entirely on basic exercises, formal exercises and basic activity such as running. Games and sports should be added and stressed on an elective basis but **not** as substitution for basic exercises.

"These daily physical workouts should start in kindergarten and continue throughout school and college.

"I think that the recommended thirty minutes (elementary) as a minimum is only a compromise."

Sammy Lee, M.D., Santa Ana, Calif.

"The benefits of daily physical activity are so obvious that it is difficult to understand why some people wish to remove

this most important requirement from school curriculums. Daily physical education programs are vital to the development of health patterns that will continue throughout life. It is one thing to treat a man, or woman, for heart disease at age forty. It is quite a different, and more logical, story to work toward the prevention of cardiovascular disease at an early age through daily physical education programs in all our schools for all children."

Thomas B. Quigley, M.D., Boston, Mass.

"I know of no scientific way of measuring the disrespect for regular, suitable activity caused by relegating physical education to stepchild status in the curriculum. It is unfortunate that the public as a whole does not yet relate physical education/sports to healthful living. At this point, let me confirm that sports are an adjunct of the physical education program, not a substitute for it. With the new emphasis on integration, the principle of a sound mind in a sound body is still the basis of excellence in living. Generations of experience have established that the growing young body needs and should have daily, supervised exercise. It seems almost tragic to see a State or school district take or consider the backward step of diluting the requirement of daily health and physical instruction in the schools."

Kenneth D. Rose, M.D., Lincoln, Nebraska

"Physical activities can fill young people's need for adventure, train them to meet and accept challenges, provide a basis for comparison with peers, teach them to accept limitations, and develop self-confidence and an adequate self-image. Activity programs which are limited to infrequent or irregular sessions are not in the best interest of youth. Young people subjected to inadequate physical education experiences tend to develop attitudes toward exercise.

"Furthermore, the AMA Committee on Exercise and Physical Fitness believes there is some evidence which relates health and fitness to improved scholastic achievement and recognizes this as a possible concomitant value of exercise programs in schools and colleges.

"For these reasons, the Committee regards comprehensive daily programs of physical education as both necessary and beneficial to the present and future health and well-being of our youth."

Paul Dudley White, M.D., (deceased)

"I recommend that the President's Council on Physical Fitness and Sports continue its position of strongly urging all States, school districts, and schools to require and provide daily physical education classes involving vigorous activities adapted to individual needs and capacities for all pupils: (1) For grades 1-6, one period per day, 5 days each week, minimum 30 minutes, exclusive of recess and time spent in dressing and showering, and (2) for grades 7-12, one standard class period per day, 5 days per week, and on **throughout life a minimum** of one hour of vigorous exercise daily or seven hours weekly. This program is essential not only for physiological reasons and physical fitness per se, but it is vital for the optimal function of the brain, for retardation of the onset of serious atherosclerosis which is beginning to appear in early adult life and even in our teenagers, and for **longevity,** and a **useful** and **healthy** life of our older citizens. It is little short of criminal to educate our young people mentally only to have them die early of 'heart attacks and strokes'—for example, at 40 because of neglect of their physical health."

Medical leaders unequivocally recommend daily physical education instruction involving vigorous exercise in Grades 1-12. The President's Council on Physical Fitness and Sports supports this recommendation and urges its implementation.

The following resolution was passed by the House of Delegates of the American Medical Association, New York 1969:

"Resolved, that the American Medical Association through its various divisions and departments and its constituent and component medical societies do everything feasible to encourage effective instruction in physical education for all students in our schools and colleges."

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